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ABSTRACT

The Federal Communications Commission's (FCC's) program for regulating domestic telecommunications common carriers is assessed in this report, and several recommendations are made to the Congress and the FCC for improving the regulatory framework provided by the Communications Act of 1934. A digest of the report and a review of the nation's telecommunications policy goals and the organization of FCC common carrier activities are provided, as well as discussions of the following topics: (1) development of competition in domestic common carrier telecommunications; (2) application of FCC price/earnings regulation; (3) costing principles and methodologies to prevent cross-subsidy (emphasizing the FCC's lack of success); (4) the FCC's limited progress in revising the uniform system of accounts; (5) deregulation of enhanced services and customer premises equipment, using separate subsidiaries as a procompetitive tool; (6) depreciation rate setting and its implications in a more competitive environment; and (7) the need for congressional action to ensure fair, nondiscriminatory access to local exchanges. Twelve appendices contain additional, detailed background information. A list of abbreviations and a glossary are included. (LMM)

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LEGISLATIVE AND REGULATORY ACTIONS NEEDED TO DEAL WITH A CHANGING DOMESTIC TELECOMMUNICATIONS INDUSTRY

Report to the Congress

by

The Comptroller General of the United States

CED-81-136
September 24, 1981

IR050043

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON D.C. 20548

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To the President of the Senate and the
Speaker of the House of Representatives

This report assesses the Federal Communications Commission's program for regulating domestic telecommunications common carriers. The report makes several recommendations to the Congress and the Commission for improving the regulatory framework provided by the Communications Act of 1934.

The Commission, supported by the courts, has issued a series of decisions which have allowed competition into the manufacture of telecommunications terminal equipment and into the interstate provision of telecommunications services. The question now centers on how to nurture competition during the transition from a highly concentrated industry structure to a less concentrated and more diversified, competitive structure made possible by new technologies. GAO conducted this review to evaluate the Commission's program for regulating domestic telecommunications common carriers in light of the changing industry structure.

GAO requested that the Commission provide us agency comments on this report. The Commission did not provide us official agency comments; however, we were provided a brief staff commentary on technical issues raised in the report.

We are sending copies of this report to the Director, Office of Management and Budget, and the Chairman, Federal Communications Commission.

Milton J. Socolar

Acting Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

LEGISLATIVE AND REGULATORY ACTIONS NEEDED TO DEAL WITH A CHANGING DOMESTIC TELECOMMUNICATIONS INDUSTRY

D I G E S T

Rapid technological change has broken down the natural monopoly characteristics of the telecommunications industry and paved the way for a more competitive industry structure. One contributor to this change has been the development of alternative transmission technologies--point-to-point microwave, satellites, and coaxial cable--to the traditional technology of paired wires.

The size of the market for telecommunications has also grown--reflecting the convergence of data processing and telecommunications--further dismantling the natural monopoly characteristics of the industry. New equipment has been developed to provide new services such as digital networks to meet computers' specialized data transmission needs.

Reacting to this technological change, the Federal Communications Commission, supported by the courts, has over the past 20 years issued a number of decisions allowing competition into the manufacture of telecommunications terminal equipment and into the interstate provision of telecommunications services, which have altered the structure of the telecommunications industry. While the established firms still exist and continue to dominate the industry, they are competing with new, small carriers in many markets. In other markets, however, the established dominant firms still operate as de facto monopolists.

Where a firm operates in two markets--one monopolized and one populated by new competitive entrants--it has an incentive to cross-subsidize the competitive markets by undercharging for services in the competitive markets and overcharging for services in the captive monopoly markets. This has created a need for the Commission to expand its regulatory approach beyond its traditional concern of potential abuse by carriers of their monopoly power to include ensuring fair competition between the established carriers offering monopoly and competitive services and new carriers offering only competitive services.

GAO conducted this review to comprehensively evaluate the Commission's program for regulating domestic telecommunications common carriers in light of the changing industry structure. The review included assessments of both the methods the Commission uses to carry out a system of price/earnings regulation for monopoly carriers and the actions it is taking to prevent anticompetitive behavior by dominant carriers against new entrants. GAO has included a considerable amount of factual and analytical data in this report because of the complexity and interrelated nature of the issues confronting the Commission and the Congress.

THE DEVELOPMENT OF COMPETITION IN DOMESTIC COMMON CARRIER TELECOMMUNICATIONS

The evolution of the domestic telecommunications common carrier industry from a highly monopolized structure to a competitive structure is not complete. GAO recommends that the Commission (having set the industry on the road to a more competitive structure) establish within its Common Carrier Bureau an industry analysis section to monitor industry structure. Through its monitoring activities, the section would provide a basis for determining which carriers are dominant and which are nondominant so that the appropriate regulatory programs and policies can be applied to these carriers. It would also enable the Commission to measure its effectiveness in encouraging competition. (See p. 28.)

If it wishes to endorse the trend toward competition in the telecommunications industry, the Congress should amend title I of the Communications Act of 1934 to direct the Commission to rely on competition and the private sector to the maximum extent possible to achieve the overall goals of the act. (See p. 27.)

To promote more efficient use of the Commission's resources, GAO recommends that the Congress amend the act to allow the Commission to exempt carriers from any or all provisions of title II, who because of their lack of market power do not require the full range of regulations. The Commission could then focus its resources on improving the regulation of those carriers whose market dominance requires continued regulation. (See p. 27.)

IMPROVING FCC's APPLICATION
OF PRICE/EARNINGS REGULATION

The Commission has used a system of price/earnings regulation which relies on rate of return/rate base regulation to govern prices charged by carriers. To implement such a program, the Commission must establish and monitor rates of return, review the reasonableness of investments and expenses, and approve individual rates for carriers' services. The Commission has, however, focused on establishing carriers' rates of return and paid little attention to carrier investment cost and expenses.

GAO recognizes that because of the nature and magnitude of the tasks involved, a system of price/earnings regulation can never be expected to fully simulate a competitive outcome. As workable competition develops, the Commission can relax its application of price/earnings regulation. Until a competitive environment exists, however, GAO recommends that the Commission take a number of actions to strengthen its application of this regulatory approach. (See p. 62.)

Uncertainty exists regarding the Commission's authority to authorize the construction of carrier facilities, particularly whether it extends to carrier switching equipment. To clarify the Commission's authority and to allow it greater flexibility in carrying out its responsibilities for determining the reasonableness of carrier investment costs, GAO recommends that the Congress amend the Communications Act to give the Commission explicit authority to require carriers to submit for approval plans for the construction of any facility subject to its jurisdiction and to allow the Commission to require carriers to file long-term facilities construction plans. (See p. 63.)

THE 20-YEAR STRUGGLE WITH COSTING
PRINCIPLES AND METHODOLOGIES

Allocating costs appropriately among various telecommunications services is a critical aspect in preventing potential cross-subsidy between monopoly and competitive services.

The Commission, over the last 20 years, has established the broad principle that costs should be fully distributed among all services. The Commission has had limited success in developing a method to implement this principle.

Tear Sheet

The Commission initially developed a methodology whose design was flawed. Efforts to correct it were unsuccessful. The Commission has recently adopted an interim costing approach to serve as a stopgap measure until a long-range solution can be developed.

To comprehensively address the problem of potential cross-subsidy, GAO recommends that the Commission include additional service categories and improved factors for allocating costs in its interim costing approach. (See p. 88.)

To develop a long-term costing approach the Commission needs to revise its Uniform System of Accounts. Since 1978 the Commission has been attempting to revise the system but without success. Management problems, identified in a November 1979 GAO report, have hampered the effort and remain uncorrected. In addition, the Commission has not decided on the overall direction or structure for the system.

GAO recommends that the Commission establish a group consisting of accountants, engineers, economists, and attorneys to revise the Uniform System of Accounts. Also the Commission needs to revise its Uniform System of Accounts to reflect current technology and business functions and to appropriately allocate costs by service which can be audited and reviewed. (See p. 99.)

With the development of competition the Commission must detect and correct carrier rates which are too low in addition to rates which are too high. The Commission, however, has had difficulty in obtaining from carriers cost data from which it can prescribe a lawful tariff. A tariff contains the rates, terms, and conditions for a communications service. GAO recommends that the Congress amend the Communications Act to provide the Commission with the authority to prescribe interim tariffs based on the cost data which the carrier has submitted. This authority will provide the Commission with a tool for dealing with carrier rates which appear too low. Should the Commission prescribe higher rates, it may increase the carrier's incentive to supply cost data which more clearly supports rates it would prefer. (See p. 88.)

USING SEPARATE SUBSIDIARIES AS A PROCOMPETITIVE TOOL

In its "Computer II Decision" the Commission embraces a separate subsidiary device as a way

of preventing the potential cross-subsidization between a dominant carrier's competitive operations in certain equipment and service markets, and its traditional monopoly offerings. The effectiveness of the separate subsidiary approach, however, depends primarily on the nature and stringency of the conditions governing separation and the quality of regulatory oversight.

The separate subsidiary approach proposed by the Commission does not go far enough in providing for organizational restructuring and separation conditions. Further, the Commission has moved too quickly toward implementing the separate subsidiary regulatory approach before many essential costing, accounting, and depreciation problems have been resolved. Further, the Commission has not undertaken a systematic and thorough assessment of what it will require--in the way of resources, staffing, and functional organization--to give the approach credibility and a realistic chance of success.

GAO recommends that the Commission strengthen the conditions governing separation adopted in the Computer II Decision.

GAO also recommends that the Commission as part of implementing any deregulation approach based on the use of separate subsidiaries carry out those tasks which are necessary to ensure their efficacy. This includes

--resolving the outstanding costing, accounting, and depreciation issues which must be implemented prior to establishing separate subsidiaries;

--training and organizing a staff to monitor and enforce compliance with its requirements and conditions; and

--prescribing conditions for capitalization and financing arrangements for the separate subsidiaries.

Looking beyond the Computer II Decision, GAO further recommends the Commission initiate a proceeding to evaluate the need for structural separation of a dominant carrier's interexchange (long distance) and intraexchange (local) operations. (See p. 135.)

Tear Sheet

DEPRECIATION RATESETTING AND ITS IMPLICATIONS IN A MORE COMPETITIVE ENVIRONMENT

During 1980 and 1981, the Commission made changes to its methods and practices for setting depreciation rates. These changes, allowing faster capital recovery, have been largely in response to the rapid changes in technology and reflect the Commission's overall thrust for a more competitive environment.

In implementing its changes, however, the Commission has not resolved questions regarding the methods and procedures needed to set new depreciation rates. For example, the proper method for allocating the depreciation reserve account to individual plant accounts has not been determined and requirements for setting depreciation rates for that part of the depreciable plant from the telephone pole to the customer's premises have not been developed.

Before proceeding to set revised depreciation rates, GAO recommends the Commission address these and other questions. Doing so will place the Commission in a position to avoid accepting and approving depreciation rates with less than the rigorous review needed. (See p. 159.)

Commission action is also needed before implementing that part of its Computer II Decision relating to customer premises equipment--telephones, computer terminals, and other equipment which may be located at the customer's premises and attached to the communications network. The Commission has proposed to deregulate as of March 1, 1982, new customer premises equipment and to continue to regulate existing customer premises equipment. (See p. 160.)

ENSURING FAIR, NON-DISCRIMINATORY ACCESS TO LOCAL EXCHANGES

Since competition was first allowed in interstate telecommunications services, the Commission has required that all carriers offering authorized interstate communications services be allowed access to local exchange facilities on a non-discriminatory basis. Such access is virtually the only means for local distribution of interstate telephone services. The Commission and the courts have, however, continued to identify access discrimination problems involving both

the types of access services provided and the rates charged for such services.

During recent years, the local exchange costs assigned to interstate services have also gradually increased, giving rise to the allegation that rates for such services subsidize intrastate rates. The existence and magnitude of any such subsidy, however, is unclear.

The Commission is addressing the problem of access discrimination. Neither the Commission's past actions nor its present proposals, however, resolve the following questions.

--What types of interconnection should telephone companies be required to provide to new carriers?

--What rates should be charged to new carriers for access to local exchanges?

--What are the effects of competition on any subsidies which may have been provided between interstate services and intrastate services?

--Can nondiscriminatory access conditions be assured without major changes in telephone industry structure and procedures?

GAO recommends that the Congress address these questions by amending the Communications Act of 1934 to establish the basic framework to create nondiscriminatory access conditions. This includes expanding the Commission's authority to allow it to regulate all long-distance telecommunications facilities and services. (See p. 184.)

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On June 30, 1981, GAO requested Commission comments on this report. The Commission did not provide GAO official agency comments. The Commission's Chairman did, however, on July 20, 1981, provide a brief written staff commentary on the technical issues raised in the report. The Chairman stated that the comments did not necessarily represent the policy of the Commission. GAO reviewed the staff commentary and revised technical material as appropriate. These revisions, however, did not affect GAO's conclusions or recommendations.

Tear Sheet

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ABBREVIATIONS

AT&T	American Telephone and Telegraph Company
CPE	Customer Premises Equipment
ENFIA	Exchange Network Facilities for Interstate Access
FCC	Federal Communications Commission
FDC	Fully Distributed Costs
GAO	General Accounting Office
GTE	General Telephone and Electronics Corporation
MCI	MCI Telecommunications Corporation
MTS	Message Toll Telephone Service
OCC	Other Common Carrier
USOA	Uniform System of Accounts
WATS	Wide Area Telephone Service

GLOSSARY

Access charges	Charges to carriers offering inter-exchange services to cover local exchange costs associated with the origination and termination of such services.
Common carrier	A company, organization, or individual providing wire or electronic communi-cations services for hire.
Continuing surveillance	A regulatory process which relies on continuing informal review rather than formal rate investigations.
Cross subsidy	The contribution of profits by one telecommunications service priced above its cost made to defer the cost of another telecommunications service priced below its cost.
Docket	The record of a proceeding which is assigned a docket number for admin-istrative control purposes.
Dominant	Used in relation to a firm in an industry which controls a significant portion of total industry output.
Economies of scale	The decline in a firm's unit costs as it increases its scale or plant size.
Enhanced service	A service which involves more than the pure transmission of information.
Efficiency	The effectiveness with which resources are allocated to meet consumer demands. Evaluating the efficiency of a firm's production process would involve considerations of input factors as well as cost, quantity, and quality of output.
ENFIA	Exchange network facilities for interstate access. This term par-ticularly refers to the charges, terms, and conditions applicable to the origination and termination of interstate services offered by other common carriers.

Equal life group	The arrangement of groups of units by length of life so that units with a 1-year life form one group, those with 2-year life form another, etc.
Execunet	A telecommunications service provided by MCI Telecommunications Corporation through which a customer can dial a local MCI Telecommunications Corporation number and be connected to a telephone in another city served by the firm.
Fully distributed cost allocation	A method of allocating total costs among various telecommunications services based on the services' historical cost responsibility.
Group plan	As applied to depreciation accounting, a plan under which depreciation charges are accrued upon the basis of the original cost of all property included in each depreciable plant account, using the average service life thereof properly weighted, and upon retirement of any depreciable property its full service value is charged to the depreciation reserve whether or not the particular item has attained the average service life.
Industry structure	The organizational aspects of firms in a particular market, including the number and size of the firms and the presence or absence of barriers to entry.
Institutional advertising	Advertising which is designed to enhance a firm's image, as opposed to advertising designed to promote a specific product or service or purely informative advertising.
Intrastate service	Service offered within the boundaries of a State, including both local and toll service. Such service presently falls under the jurisdiction of State regulatory commissions.
Interexchange service	Long distance or toll telecommunications service, as distinguished from local telephone service. It includes both intrastate and interstate toll service.

Interstate service	Telecommunications services between States. Such service presently falls under the Federal Communications Commission's jurisdiction.
Joint Board	A board composed of Federal Communications Commission and State commission members, created under Section 410 of the Communications Act of 1934.
Jurisdictional separations procedures	The procedures for dividing the cost of common carrier facilities and services between interstate and intrastate jurisdictions.
Life indication	The average life determined by an analysis of a band of actual plant mortality data or by a computed mortality analysis.
Local exchange service	Telephone service for single line business and residence customers which provides the capability for originating calls to a defined local calling area, for receiving incoming calls, and for access to and from the toll network.
Marginal cost	The rate at which total costs change as output is varied. It may be thought of as the difference in total cost between producing or not producing an additional unit of output. Marginal cost is generally synonymous with incremental cost.
Message toll telephone service	A long-distance communications service permitting subscribers to local exchange service in separate areas to establish two-way telecommunications on a message-by-message basis.
Mortality data	A historical record showing: --The number of plant items or equivalent units (usually expressed in dollars) added each calendar year. --The number of units retired each year, and the distribution by years of placing of such retirements.

	--The net increase or decrease resulting from purchases, sales, or adjustments, and the distribution by years of placing of such amounts. --The number that remains in service at the end of each year, and the distribution by years of placing of these survivors.
Natural monopoly	An industry in which economies of scale are so pronounced that competition among firms results in a monopoly by the largest firm.
Net salvage	The salvage value of the property retired less the cost of removal.
Network	A system where a number of terminal points are able to access one another through a series of communications lines and switching arrangements.
Price/earnings regulation	Regulation which aims at (1) determining a firm's total revenue requirements, (2) determining revenue contributions by user group, and (3) designing rate structures.
Primary allocation records	Accounts in which data on individual service revenue and usage is recorded. This information can be used to allocate common costs among various services.
Private line services	A communications link between two or more designated points set aside for a particular customer's exclusive use during stated time periods.
Public land mobile radio service	Mobile radio-telephone services provided by telephone common carriers and radio common carriers. These services include one-way paging and two-way telephone service interconnected with the public telephone network.
Rate of return/rate base regulation	A method of regulation allowing a regulated firm to earn revenues equal to its cost of service, including a fair return to stockholders and bondholders. Such regulation attempts to prevent firms from receiving monopoly profits but still allows them to attract new capital.

Remaining life	The future expected service in years of the survivors at a given age.
Service life	The period between the time of installation of telephone plant and the time of its retirement.
Service value	Original cost of an asset less any salvage plus the cost of removal.
Settlement procedures	The method for dividing revenues from a long-distance call involving two or more companies.
Tariff	A schedule governing any generally applicable charge, characteristic, regulation, or practice associated with a regulated telecommunications service.
Terminal equipment	Any equipment capable of sending and/or receiving information over a communications channel.
Theoretical depreciation reserve	An estimate of the balance which should be in the depreciation reserve at the time of study considering the distribution by ages of existing property.
Uniform system of accounts	An accounting system prescribed by the Federal Communications Commission for domestic common carriers.
Vertical integration	Combining firms at different stages of the production process into one business unit.
Vintage group	All of the plant group under study that was installed in the same accounting period.
Wide area telephone service	A system where a telephone user is allowed an unrestricted number of calls in specific areas for one overall rate.

CHAPTER 1

INTRODUCTION

Technological changes in the domestic common carrier telecommunications industry have prompted a critical reexamination of the basic communications policy and regulatory methods contained in the Communications Act of 1934 (47 U.S.C. 151 et seq.), the enabling legislation of the Federal Communications Commission (FCC). During the last several Congresses, extensive hearings have been held and, although none was enacted, legislation was introduced to amend the Communications Act. At present a bill (S. 898, 97th Cong., 1st Sess.) is pending before the Congress which would set new common carrier communications policy goals and provide FCC different regulatory tools.

These same technological changes have spurred the growth of the domestic common carrier industry. In 1979, the over 1,500 carriers in the domestic common carrier industry generated over $53 billion in service revenues, employed over one million persons, and had a gross investment in plant and equipment of about $155 billion.

This report contains conclusions and recommendations which provide a framework from which the Commission can improve its regulatory program and the Congress, through legislative change, can clarify the methods for regulating domestic telecommunications common carriers.

ACHIEVING THE NATION's TELECOMMUNICATIONS POLICY GOALS

Title I of the Communications Act contains this Nation's policy for common carrier telecommunications. The act created FCC

> "* * * for the purpose of regulating interstate and foreign commerce in communication by wire and radio so as to make available, so far as possible, to all the people of the United States a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges * * *."

While general in nature this policy statement encompasses several goals--rapidity, efficiency, universality of service, adequate facilities, and reasonable charges.

To satisfy these policy goals and the goals of earlier State regulation a regulated monopolized industry structure developed, reflecting the traditional belief that the domestic common carrier telecommunications industry was a "natural monopoly."

A natural monopoly exists when the production of a good or service is characterized by economies of scale; that is, per unit production costs decrease as the firm becomes larger. Consequently, an industry's largest firm has the lowest cost per unit of output and is the most efficient. This firm is able to underprice its competitors and drive them out of business; a monopoly by the largest firm is the "natural" result. A key attribute of a natural monopoly is that a single firm can supply the entire market for a good or service more cheaply than any combination of smaller firms.

To secure the benefits from the natural monopolist's low-cost production for society, while preventing the monopolist from exploiting its monopoly position, regulation is imposed. Unregulated monopolists, for example, may produce too little, charge prices that are too high when compared to a competitive situation, engage in discriminatory pricing, and reap monopoly profits. Regulation, thus, attempts in such circumstances to establish a means for assuring good performance. To accomplish this, the regulatory agency may take actions such as limiting the number of firms which may provide service in a particular market and placing restrictions on firms' freedom to compete. In addition, the agency, rather than the marketplace, becomes responsible for determining price, quality, and conditions of service.

Title II of the Communications Act sets out FCC's regulatory structure for dealing with a monopolistic industry structure. The act requires every common carrier to furnish services upon reasonable request and at reasonable charges. Consequently, common carriers must file interstate tariff schedules with FCC, and the rates and requirements in those schedules are subject to FCC review and regulation. No carrier may construct or acquire additional interstate telecommunications transmission facilities or curtail or discontinue service over these facilities without FCC approval. Carrier accounting and depreciation practices are also subject to Commission regulation. Appendix I highlights the key sections of titles I and II of the Communications Act pertaining to domestic common carriers.

The natural monopoly characteristics of an industry, including telecommunications, however, are not fixed over time. The particular economies of scale which determine whether one or many firms can serve the market at the lowest cost depends on the technology available at a specific time. A natural monopoly, therefore, is the best structure for an industry only as long as the technology which gave rise to the monopoly dominates. For example, technological changes may allow lowest cost production to occur at relatively small output levels, thus changing the optimum industry structure from a natural monopoly to a competitive system. Conversely, technology may change in the other direction, allowing lowest cost production to occur only in a monopoly. In either case, preserving an industry structure no longer warranted by the available technology can impose various costs on society, such as potentially higher prices.

The ability to satisfy the entire market is also not fixed over time. For example, increased demand for a good or service can enlarge the market beyond the monopolist's economies of scale. Consequently, the enlarged market can be served by more than one firm.

Rapid technological change has broken down the natural monopoly characteristics of the telecommunications industry and paved the way for a more competitive industry structure. One contributor to this change has been the development of alternative transmission technologies--point-to-point microwave, satellites, and coaxial cable--to the traditional technology of paired wires.

The size of the market for telecommunications has also grown--reflecting the convergence of data processing and telecommunications--further dismantling the natural monopoly characteristics of the industry. For example, traditionally telecommunications terminal equipment consisted of essentially one product--the black dial telephone. As the use of computers has increased, however, the need arose to establish communications systems which would facilitate activities between computers. Such systems require a variety of terminal equipment, much of which has been made available through advances in computer and electronics technology. This has also changed the kinds of services provided, moving beyond simple voice communications. For example, digital networks have been established to meet computers' specialized data transmission needs. Services have developed to allow disparate computers to communicate.

Reacting to this technological change, FCC, supported by the courts, over the last 20 years has issued a series of decisions which have allowed competition into the manufacture of telecommunications terminal equipment and into the interstate provision of telecommunications services.

The primary rationale FCC offered in its decisions to allow competition in the terminal equipment sector was the consumer's right to interconnect with the telecommunications system equipment of his or her own choosing so long as the equipment was not harmful to the network. Natural monopoly issues in terminal equipment were not raised since FCC recognized that this sector's economies of scale are not significant.

FCC offered several rationales in its series of decisions introducing competition in interstate services. First, it reasoned that the public would benefit from the dynamic nature of increased competition. These benefits would include increased technical innovation, the introduction of new techniques and services, potentially lower costs, and increased responsiveness on the part of existing carriers.

In addition, the Commission reasoned that the new common carriers that were providing these services were not entering a fixed homogeneous market. As a result, these carriers could be

expected to satisfy demands which were not being met by existing carriers and, therefore, expand the size of the aggregate market. Finally, FCC felt that competition in interstate services was in the public interest and would further the policy goals of the Communications Act. Appendix IV contains a chronology of key FCC decisions allowing competition.

This series of decisions and the resulting court cases have altered the structure of the telecommunications industry. While the established firms still exist and continue to dominate the industry, they are competing with new, small carriers in many markets. In other markets, however, the established dominant firms still operate as de facto monopolists. This has created a need for FCC to expand its regulatory approach beyond its traditional concern of potential abuse by carriers of their monopoly power to include ensuring fair competition between the established carriers offering monopoly and competitive services and new carriers offering only competitive services. In particular, a monopolist, even a regulated one, will have a strong incentive to practice "monopolistic cross-subsidy" whereby its protected monopoly services are charged rates much higher than costs, yielding high rates of return while existing or potentially competitive services are charged rates much lower than costs, yielding low or negative rates of return. FCC has tried to ensure in its regulation that the monopoly services, therefore, do not cross subsidize the competitive offerings or that monopoly services' consumers do not bear a portion of the cost of the competitive offerings.

ORGANIZATION OF FCC COMMON CARRIER ACTIVITIES

FCC is an independent Federal agency headed by seven Commissioners, one of whom serves as Chairman. Commissioners are appointed by the President and approved by the Senate for terms not to exceed 7 years. The Commissioners supervise all FCC activities, delegating responsibilities to staff units, bureaus, and committees of Commissioners.

In fiscal year 1981 FCC budgeted about $14 million and 322 positions for its common carrier activities. Most FCC work in this area is carried out by its Common Carrier Bureau whose functions include

--developing, recommending, and administering common carrier policies;

--conducting adjudicatory and rulemaking proceedings, including rate and service investigations;

--determining the lawfulness of carrier tariffs;

--acting on applications for service, facility and radio authorizations;

--reviewing carrier performance;

--conducting economic research and analysis;

--administering Commission accounting and reporting requirements;

--conducting compliance and enforcement activities; and

--recommending for FCC prescription annual depreciation rates for classes of communications plant.

OBJECTIVES, SCOPE, AND METHODOLOGY

The purpose of this review was to evaluate FCC's program for regulating domestic telecommunications common carriers. Our review drew on an earlier report 1/ which set out the three major issues facing the Congress in the domestic common carrier area.

--What domestic common carrier telecommunications policy goals should the United States pursue?

--What industry structure should provide common carrier services?

--Can the present methods for regulating the common carrier industry be improved?

In particular, we examined FCC's activities in regulating the common carrier industry with special attention given to FCC's regulation of the American Telephone and Telegraph Company (AT&T). We did this for two reasons. First, from our analysis, as will be discussed in greater detail in chapter 2, AT&T is a dominant carrier in the industry. As a result, it possesses market power which might be abused and it could take advantage of an incentive to thwart competition by engaging in anticompetitive practices such as cross-subsidy. Second, reflecting this potential, FCC over the last 20 years has focused the majority of its regulatory activities for preventing monopoly abuses and anticompetitive practices on AT&T. Consequently, FCC's actions vis-a-vis AT&T served as the primary, if not the sole, example of its execution of its regulatory responsibilities and thus a major focus of our review. 2/

1/"Developing a Domestic Common Carrier Telecommunications Policy: What Are The Issues?" (CED-79-18, Jan. 24, 1979).

2/While FCC also regulates international common carriers, our review did not focus on this aspect of their program because we had covered this subject in two earlier reviews. See "Responsibilities, Actions, and Coordination of Federal Agencies in International Telecommunications Services" (CED-77-132, Sept. 29, 1977), and "Greater Coordination and a More Effective Policy Needed for International Telecommunications Facilities" (CED-78-87, Mar. 31, 1978).

In reviewing the Commission's regulatory program, we had two objectives. Our first objective was to assess the methods FCC uses in implementing for monopoly common carriers a system of price/earnings regulation which involves rate of return/rate base regulation. We examined FCC's activities regarding (1) setting an allowed rate of return, (2) assessing the reasonableness of operating expenses, (3) approving additions to the rate base, (4) approving accounting and depreciation practices, and (5) judging the reasonableness of individual tariffs (chs. 3, 4, and 7). Our second objective was to review the regulatory problems associated with introducing competition into domestic telecommunications. We examined the actions FCC has taken to prevent anticompetitive behavior against new entrants by dominant common carriers. These actions include (1) creating cost standards to judge the reasonableness of rates and to prevent cross-subsidy (ch. 4), (2) revising the Uniform System of Accounts (ch. 5), (3) using separate subsidiaries as an additional safeguard against cross-subsidy or other anticompetitive actions (ch. 6), and (4) developing access charges to ensure nondiscriminatory interconnection (ch. 8).

To accomplish our objectives, we initially reviewed the economic literature to identify the components of a traditional regulatory program and any relevant alternatives. We also sought in the literature review, information on potential areas of anticompetitive behavior by dominant common carriers and the efficacy of methods to mitigate such behavior. This was done to provide a benchmark against which we could compare FCC's program.

To provide an additional benchmark, we visited three representative State regulatory commissions (New York, Michigan, and Wisconsin) suggested to us by FCC and the National Association of Regulatory Utility Commissioners. We obtained a perspective of how their regulatory programs worked. We also contacted two other Federal regulatory agencies to discuss the aspects of their programs which were relevant to FCC's activities.

We next reviewed FCC decisions over the last 20 years in regulating domestic common carriers and preventing anticompetitive behavior. As part of this work, we interviewed present and former FCC officials and reviewed FCC documents and written comments filed on FCC actions by members of the public and representatives of the industry. We also reviewed legislative proposals and associated hearing records as well as court decisions.

As part of our assessment, we contacted officials in the domestic common carrier industry, representatives of industry associations, and other Federal agencies, most notably the National Telecommunications and Information Administration and the Department of Justice. All of the groups we contacted are listed in appendix II. In addition, we hired three consultants knowledgeable in the field of common carrier regulation. These consultants provided advice and expert opinion on the report. (See app. III.)

Our review was conducted at FCC headquarters, Washington, D.C., and its Common Carrier Bureau field office in New York City from June 1979 through July 1981. During this time, we worked with two other legislative agencies. We provided background information to the Congressional Budget Office to assist it in assessing the budgetary impact of H.R. 6121, "The Telecommunications Act of 1980," which was being considered by the 96th Congress. We also have maintained an ongoing working relationship with the office of Technology Assessment as part of its study of Telecommunication Technology and Public Policy. This contact included reviewing draft material it developed relative to its study.

In August 1980, while we were conducting our review, Peter W. Rodino, Jr., Chairman, House Committee on the Judiciary, requested our comments on certain portions of H.R. 6121 dealing with separate subsidiaries. Based on the work we had done as of that date, we provided our comments in a letter dated September 5, 1980, (B-200146, CED 0-371).

Our analysis and evaluation of FCC's Computer II decision (77 FCC 2d 384 (1980)) in chapter 6 deals only with the adequacy of the structural separation and procompetitive safeguards which the agency has required as a condition for the participation of the dominant carrier in "deregulated" offerings of enhanced services and terminal equipment. We did not consider the more fundamental, threshold question of AT&T's ability to engage in these activities at all under the terms of a 1956 Consent Decree entered into by it and by the Department of Justice in settling an antitrust action brought by the Government in 1949. The construction or interpretation of the Consent Decree and what the decree permits AT&T to do is a matter of dispute between FCC and Justice.

On March 4, 1981, AT&T petitioned the U.S. district court with jurisdiction over the 1956 Consent Decree to clarify the decree to allow it to participate in deregulated, competitive service and equipment offerings in the manner provided for in FCC's Computer II decision. 1/ As of July 1, 1981, the court had not ruled on the petition.

Further, Justice is presently engaged in an antitrust action against AT&T which alleges attempts by the firm to monopolize the domestic telecommunications industry and which seeks the divestiture of various operations and associated assets of the firm. 2/

1/United States v. Western Electric Company, Inc. Civ. No. 17-49, (Dist. Ct. for the Dist. of New Jersey).

2/United States v. American Telephone and Telegraph Company, No. 74-1698 (Dist. Ct. for the Dist. of Col.).

Because this matter is still in litigation, we have not addressed this area and have refrained from commenting on the issues involved.

CHAPTER 2

THE DEVELOPMENT OF COMPETITION IN DOMESTIC COMMON CARRIER TELECOMMUNICATIONS

Domestic common carrier telecommunications is in the midst of an evolution--from a highly monopolized structure to a competitive structure. Technology has been the driving force behind this change, reducing the barriers to entry into the industry and creating market opportunities for a variety of firms. FCC and the courts have reacted to the impact of technological change by removing regulatory restrictions on entry and, as a result, numerous firms have sought to enter the industry. Despite these changes the structure of the industry remains highly concentrated and dominated by one firm.

Having established a policy in favor of competition, FCC must be in a position to monitor competitive development so that regulation may be relaxed in markets where workable competition has been established and maintained in markets where monopoly conditions still exist. FCC currently has no ongoing analysis of the state of competition. We believe FCC needs to establish such an industry analysis function, and use information this function develops in its regulatory decisionmaking.

If the Congress wishes to endorse the trend toward competition it needs to amend title I of the Communications Act to direct FCC to rely on competition to the maximum extent possible to achieve the overall goals of the act. To assist in deregulating nondominant carriers, the Congress needs to give FCC authority to relax title II regulation of carriers when it finds it in the public interest.

THE DOMESTIC COMMON CARRIER TELECOMMUNICATIONS INDUSTRY--WHO ARE THE PLAYERS?

The largest, and most prominent, firm in the common carrier industry is AT&T or the Bell System. AT&T is defined as the parent company, which includes AT&T Long Lines Department (provider of interstate long-distance services); its principal domestic telephone operating companies; the Western Electric Company (the system's manufacturing arm); and Bell Telephone Laboratories (the system's research and development arm). AT&T is both a holding and an operating company. It owns 100 percent of Western Electric's stock and 50 percent of Bell Laboratories' stock (Western Electric owns the other 50 percent). In addition, AT&T owns controlling interest in 23 of its 25 operating companies and minority interest in 2 others.

AT&T is the largest nonfinancial corporation in the world. AT&T's operating revenues in 1979 were over $46 billion and its

gross plant totaled almost $124 billion. 1/ AT&T provides 85 percent of the Nation's local exchange service. 2/ It also provides 81 percent of the long-distance interexchange service--Message Toll Telephone Service (MTS) and Wide Area Telephone Service (WATS). 3/

In addition, AT&T is engaged in virtually all other aspects of the common carrier telecommunications industry. For example, it is the major private line voice and data services supplier 4/ and provides the bulk of the facilities used in transmitting radio and television programs.

The so-called independent telephone companies provide most of the remainder of the Nation's telephone service. There are about 1,500 small telephone companies many of which are cooperative and municipal systems. The exception to this are the few medium-sized systems which are the subsidiaries of five independent holding companies. Table I compares these firms to AT&T on the basis of revenues and telephones served. General Telephone and Electronics Corporation (GTE) is by far the largest of the major independents. Like AT&T it operates local exchanges, provides a variety of interstate services, and manufactures communications equipment. Overall, the independent telephone companies provide about 19 percent of domestic telephone service, while serving about one-half the U.S. land area.

1/1979 data is used in this section for the purpose of consistency since more recent data was not available in all cases.

2/Local exchange service provides users with the ability to originate and receive calls within a defined local calling area, and to access the long-distance interexchange services network.

3/MTS/WATS is long-distance telephone service. It is provided on a switched basis which means a user can reach potentially any telephone subscriber in the United States. MTS/WATS is used by both residential and business customers, and it is the largest form of interexchange telecommunications service.

4/Private line telecommunications services are provided between or among two or more points over facilities dedicated to a particular customer's use. Various types of services are available on a private line basis, including voice, data, facsimile and audio/video programing transmission. The demand for private line services consists entirely of business traffic.

Table I

A Comparison of AT&T and the Independent Telephone Companies
(1979)

Company	Operating revenues (000)	Percent share	Telephones served	Percent share
American Telephone and Telegraph Co.	$46,430,667	83.6	141,936,300	81.0
General Telephone and Electronics Corp.	4,380,965	7.9	15,138,800	8.6
United Telecommunications, Inc.	1,281,627	2.3	4,501,900	2.6
Continental Telephone Corp.	901,011	1.6	3,023,600	1.7
Central Telephone and Utilities Corp.	526,192	1.0	1,888,600	1.1
Mid-Continent Telephone Corp.	218,566	0.4	1,062,200	0.6
Other independent telephone companies	1,788,639	3.2	7,610,600	4.4
Total	$55,527,667	100	175,162,000	100

Source: U.S. Independent Telephone Association.

The primary established carrier providing domestic telegraph communications services is the Western Union Telegraph Company. Western Union, until January 1979, provided public message telegram service as a de jure monopoly; however, FCC has relaxed the legal barrier to entry into this service. In addition, Western Union has virtually no domestic competition in the area of switched public record telex/TWX services. 1/ Western Union

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1/Telex/TWX is a service where written messages are originated and terminated directly at a customer's premises in teletypewriter machines provided as part of the service.

also provides some private line and other services which compete with similar services by other carriers. Western Union's operating revenues in 1979 were $636 million, and its gross plant totaled $2 billion.

The most recent additions to the common carrier industry are the so-called other common carriers (OCCs). These carriers have developed primarily in response to FCC and court decisions allowing entry into the common carrier industry discussed in Chapter 1. The OCCs are usually grouped into four categories--Specialized Common Carriers, Domestic Satellite Carriers, Resale (including value added) Carriers, and Miscellaneous Common Carriers.

Specialized Common Carriers provide terrestrial point-to-point private line voice and data communications primarily via their own intercity microwave transmission facilities. The connection between the user's premises and the carrier's network is usually leased from the local telephone company. Most of these carriers have also recently expanded their offerings to include public switched services--in particular MTS/WATS equivalents. There are six specialized carriers, and their operating revenues for 1979 totaled about $247 million. MCI Telecommunications Corporation and Southern Pacific Communications Co. are among the largest specialized carriers.

The Domestic Satellite Carriers offer essentially the same services as the specialized carriers but they use satellites instead of microwave for transmission. Because of the costliness of developing and launching satellites, initial costs are higher than those for a microwave system; however, satellite transmission costs are insensitive to distance, generally giving satellite carriers a cost advantage over long distances. There are three satellite carriers operating--RCA American Communications Inc., Western Union and American Satellite Corporation.

The Resale Carriers lease circuits from other carriers, primarily AT&T, and use these circuits to provide service to the final user. Those resale carriers which add specialized services to existing services are more specifically referred to as value-added carriers. Services which they offer might include specialized data processing capabilities which permit different computer terminals to communicate with one another. The major value added carriers are GTE-Telenet; Tymnet, Inc.; and Graphnet Systems Inc. Included among the pure Resale Carriers are those entities that lease satellite transmission capacity from the underlying satellite carriers and resell the transmission of television signals to cable television networks. Because they do not construct facilities networks, investment costs and construction delays for Resale Carriers are less than for the Specialized or Domestic Satellite Carriers thus tending to lower the barriers to entry in this industry group.

The 48 Miscellaneous Common Carriers, like the Specialized Common Carriers, own their own microwave relay facilities. Their

main service is one-way transmission of television signals to cable television systems, although they also provide some service to television broadcast stations and a very limited amount of other point-to-point services, including data, facsimile and voice transmission.

Complimenting the firms providing service are those which manufacture telecommunications equipment. Such equipment is used for transmitting, switching and terminating voice and data communications and is manufactured by a wide variety of firms. This portion of the industry will be discussed more fully in a subsequent section.

COMPETITIVE STATUS OF THE TELECOMMUNICATIONS INDUSTRY

Technological change has paved the way for the introduction of competition into the telecommunications industry, breaking down the former barrier of natural monopoly. FCC and the courts have responded to this change by relaxing the legal barriers to entry and, as a result, new firms have entered the industry. The telecommunications industry, however, remains highly monopolized.

To provide a perspective on the competitive status of the common carrier telecommunications industry, we collected revenue data for carriers operating in common carrier telecommunications markets and submarkets. 1/ We then used this data as a method for determining which firms appear to possess market power and, thus, may be considered dominant.

In defining telecommunications markets, we used a traditional approach which attempts to define market boundaries based on the interchangeability of products and services offered within them. Such an approach is recognized both in law and scholarly literature. We limited our analysis to domestic common carrier telecommunications services and equipment (excluding mobile services), in keeping with the scope of our review. We did not include some services and equipment which others might include in a discussion of the relevant submarkets for the telecommunications industry--such as postal services and computers. The telecommunications services we included involve transmitting information electronically, over distance, from an identified sender to an identified recipient. This is in contrast to transmission of information over distance on a mass media basis such as that provided by television. The telecommunications equipment market involves electronic and electromechnical devices used to originate, transmit, switch, and terminate messages.

1/As discussed on page 24, FCC has not performed such an analysis of the domestic common carrier industry.

Our analysis also considers markets on a national basis. We recognize that there may be other methods for assessing market structure, for example, on a regional basis. We chose, however, to conduct our assessment on a national basis since the necessary data was available from FCC or others we contacted. We also chose to measure a firm's market share by computing the ratio of its revenues (expressed as a percentage) to those of all firms in the particular market or submarket. Such a method is often used in assessing market structures. For example, FCC used such an approach in its 1976 evaluation of the economic effects of competition in the telecommunications industry (Docket 20003).

Data we used in carrying out this analysis was obtained from a variety of sources. Much of the data was taken from FCC's annual publication "Statistics of Communications Common Carriers" and from material presented by FCC in docketed proceedings. Other data was obtained from common carrier industry sources. Finally, certain 1970 and 1975 data relating to the independent telephone industry was obtained from the U.S. Department of Justice. 1/

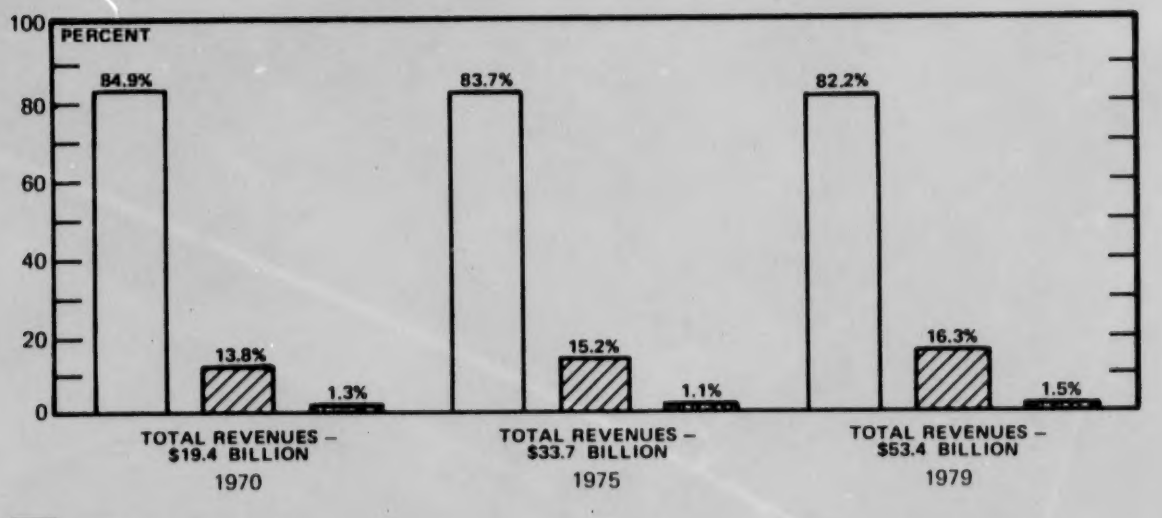
The telecommunications services market structure

Table II shows the market share as measured by total revenues for the entire telecommunications services market. This market includes all of the carriers discussed on pages 9 through 13 and is measured on a nationwide basis. While its market share has declined slightly, AT&T still accounts for 82 percent of the market. AT&T's decline in market share is a product of the growth of the independent telephone companies which tend to be situated in the more rapidly growing areas of the country. Despite the relaxation of the legal barriers to entry and their rapid growth, the other common carriers' overall market share has remained largely unchanged.

1/Data obtained from the Department of Justice was collected in connection with its antitrust proceeding against AT&T. The accuracy of the data we used was, however, agreed to by both AT&T and Justice.

TABLE II

TELECOMMUNICATIONS SERVICES MARKET SHARES AS MEASURED BY REVENUES



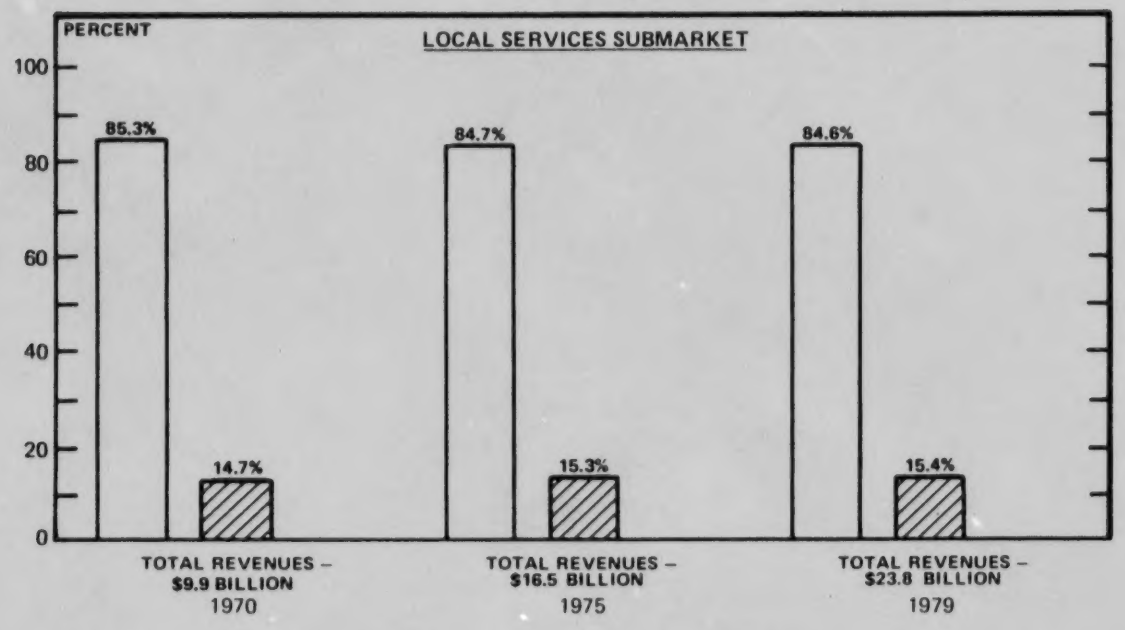
1/ Includes Western Union, Specialized Common Carriers, Domestic Satellite Carriers, Resale Carriers, and Miscellaneous Common Carriers.

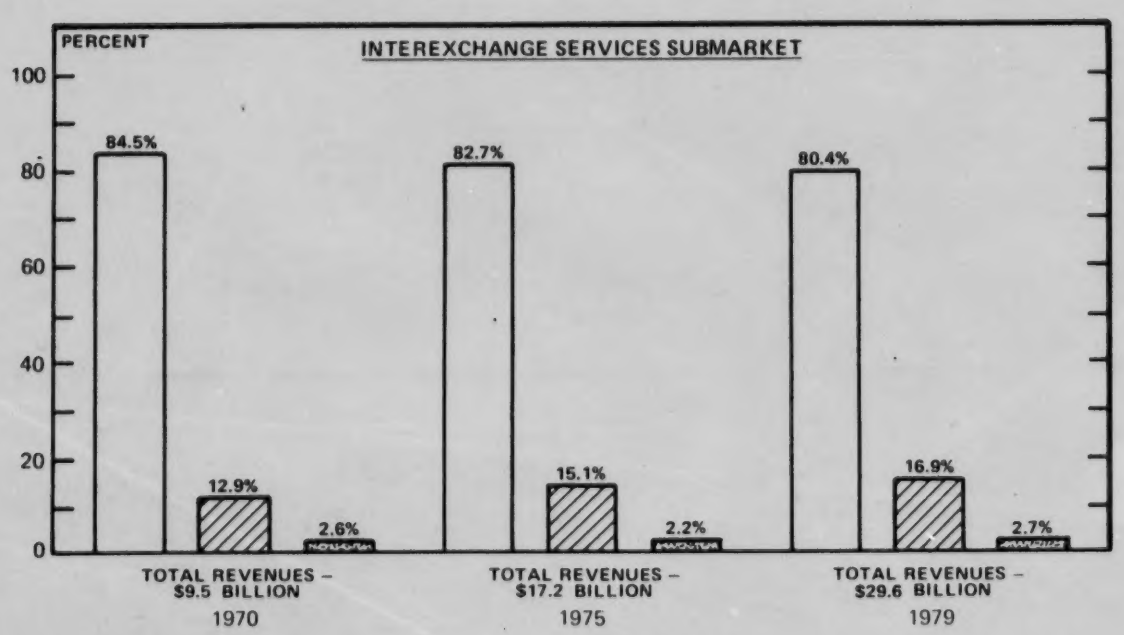
Source: FCC, U.S. Independent Telephone Association, Department of Justice, and Southern Pacific Communications Co.

Table III breaks down the total services market into a local services submarket and an interexchange services submarket. In both of these submarkets, AT&T has maintained a market share in excess of 80 percent, although its share of the interexchange services submarket has declined somewhat. The other common carriers do not operate in the local services submarket which is comprised of primarily telephone services and which has historically been served on a monopoly basis by AT&T and the independents. Their share of the interexchange submarket has remained largely unchanged.

TABLE III

LOCAL SERVICES AND INTEREXCHANGE SERVICES SUBMARKET SHARES AS MEASURED BY REVENUES





Source: FCC, U.S. Independent Telephone Association, Department of Justice, and Southern Pacific Communications Co.

The interexchange submarket can be broken down into several different sub-submarkets. FCC, in its Second Computer Inquiry, 1/ has made an initial distinction between basic and enhanced services within what we have designated as the interexchange services submarket. A basic transmission service is defined by FCC as the offering of transmission capacity to move information between two or more points. In offering this capacity, a communications path is provided for the analog or digital transmission of voice, data, video, or other information. An enhanced service is a service which involves more than the pure transmission of information. For example, in an enhanced service, computer processing applications are used to act on the content and other aspects of the user's information.

Within the basic transmission services sub-submarket we see three major service sectors--MTS/WATS, private line services, and public switched record services. 2/ Table IV presents market share data for these three sectors. In MTS/WATS, the largest sector in terms of revenues--total revenues in 1979 of $26.9 billion--AT&T again has, by far, the overwhelming market share. The other common carriers were allowed into this sector by a 1977 court decision. From 1977 through 1979 their market share grew to approximately one-half of 1 percent.

The private line services sector has experienced the most significant penetration by the OCCs reflecting the fact that (1) regulatory barriers to entry were relaxed in 1971; (2) until the 1977 court decision this was the only area in which OCCs were competing; and (3) growth in demand for these services has been very rapid. Although the OCCs' share has grown to almost 10 percent of the sector, AT&T's share remains in excess of 85 percent.

The public switched record services sector consists almost entirely of Western Union's Telex/TWX service. Since AT&T discontinued TWX service in 1971 and sold some of the associated facilities to Western Union, Western Union has maintained virtually a 100 percent share of the sector.

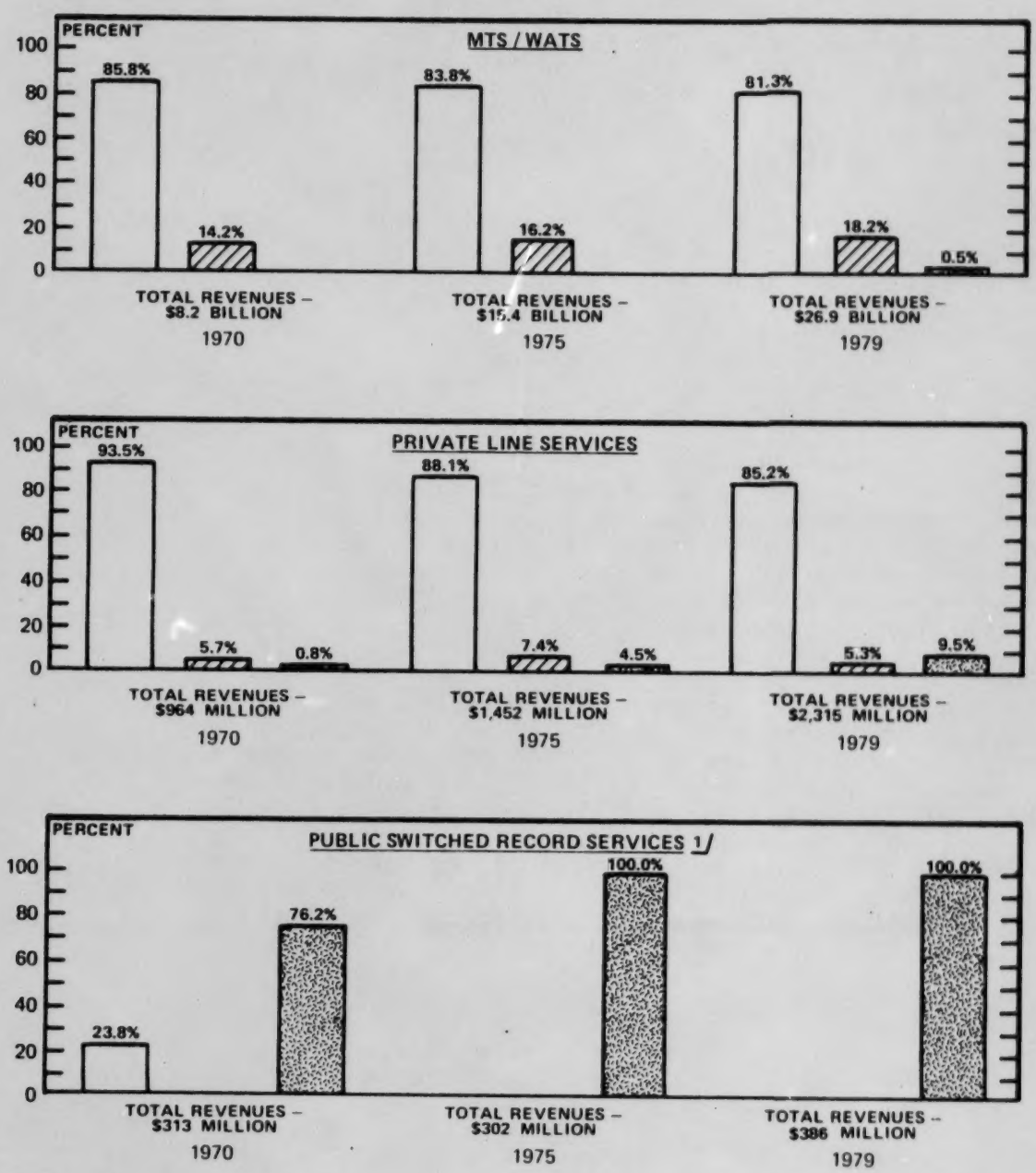
Reliable data on the enhanced services sub-submarket is not available. Consequently, its overall size cannot be accurately determined or the share of its participants computed.

1/Docket 20828, amendment of section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry) is discussed further in chapter 6.

2/These are the same categories used by FCC in its Competitive Carrier Rulemaking (Docket 79-252).

TABLE IV

MARKET SHARES AS MEASURED BY REVENUES FOR MTS / WATS, PRIVATE LINE SERVICES, AND PUBLIC SWITCHED RECORD SERVICES SECTORS



1/ Other common carriers for Public Switched Record Services consists almost solely of Western Union

Source: FCC, U.S. Independent Telephone Association, Department of Justice, and Southern Pacific Communications Co.

As measured by market share, AT&T is a dominant firm in the telecommunications service market, maintaining an overwhelming share in virtually every submarket and sector. 1/ This dominance is further reinforced by two additional factors. First, AT&T dwarfs its competitors in size (for example, revenues, net plant, and net operating income). None of the competitors, we believe, are large enough to perceptibly influence the price of overall telecommunications services by their decisions regarding supplying telecommunications services. Second, AT&T controls access to an overwhelming portion of the local services submarket by virtue of its franchised local monopolies. Competitors in the interexchange services submarket depend on these facilities to provide their services.

Consequently, viewed strictly from a structural perspective, we believe the overall services market cannot be considered competitive. Further, as noted in chapter 1, regulation has been imposed in the telecommunications industry because of the concern that a firm holding a monopoly position would abuse its monopoly power. Because AT&T continues as a dominant firm in this industry and because it has considerable monopoly power we believe, continuation of price/earnings regulation is needed.

At the opposite end of the spectrum from AT&T are most of the other common carriers. These firms are relatively small--both in absolute revenue and in market share--and possess no real market power in any of the markets, submarkets, or sectors in which they operate. Because of their lack of market power, we believe these firms do not require the price/earnings regulation which would be applied to dominant carriers. FCC has recognized this fact in its Docket 79-252 proceeding begun in May 1979 and is attempting to relax regulatory requirements for competitive carriers. This effort will be discussed in a subsequent section.

In between these two extremes lie several firms which may or may not be considered dominant in particular markets or submarkets. For example, Western Union, as measured by market share, is a dominant provider of services in the public switched record services sector. The potential exists for Western Union to use this position to behave anticompetitively in other sectors where it faces competition. FCC has removed the legal barriers to entry into this sector and at least one firm, Graphnet Systems Inc., has shown a desire to enter this sector. Further, facsimile equipment combined with the MTS/WATS services may provide a substitute which may mitigate Western Union's market power in this sector.

1/Economists have traditionally considered a firm dominant if it controls at least 40 percent of the total market.

Another firm for which dominance is an open issue is GTE. As noted previously, GTE is the largest independent telephone company and has about 8 percent of the total services market as measured by revenues. GTE also controls bottleneck facilities through its local monopolies in several major cities and occupies a major position in the enhanced services sub-submarket through its ownership of GTE Telenet Corporation.

Whether these and other carriers are dominant and possess such market power that price/earnings regulation or regulation in some form should be applied, requires additional analysis. Such a determination can only be made after FCC has made a detailed study of such factors as the relevant markets in which these firms operate and the extent to which other services may act as substitutes for the services in the dominated markets. As will be discussed in a subsequent section, we believe this detailed analysis is the responsibility of the regulatory agency.

Telecommunications equipment market

The telecommunications equipment market involves electronic and electromechanical devices used to originate, transmit, switch, and terminate messages. We divided this market into three submarkets--central office switching equipment, transmission equipment, and terminal or customer premises equipment. Major providers of a broad line of telecommunications equipment include Western Electric, the GTE subsidiaries of Automatic Electric Company and Lenkurt Electric Co., Stromberg Carlson, Inc., and the International Telephone and Telegraph Co.

Analysis of this market and its relevant submarkets is hampered by a lack of comprehensive data. For example, conclusions which other organizations, in particular FCC, have reached regarding the terminal equipment submarket have been largely based on less than complete evidence.

Of the three submarkets the one which has received the most attention has been the terminal equipment submarket. As a result of Commission decisions directed at removing tariff provisions that restricted noncarrier provided terminal equipment from being attached to the telephone network, this submarket has been subject to an increasing amount of competition as new and innovative types of equipment have been introduced into the marketplace. Terminal equipment manufacturers are not subject to economic regulation by FCC, and therefore, are not required to file reports with the Commisssion as are common carriers. Their equipment, however, must be registered with FCC. FCC statistics, compiled during its registration program, indicate that over 600 firms are manufacturing a wide range of terminal equipment.

Data developed by the Office of Technology Assessment as part of its study of Telecommunication Technology and Public Policy indicates that various types of terminal equipment are

subject to different levels of competition. 1/ For example, the manufacturers captive to the telephone operating companies dominate the key telephone and dial in handset telephone sectors. On the other hand, new market entrants have made significant gains at the expense of the captive manufacturers in certain other sectors like private branch exchange, 2/ although the captive manufacturers still have over 50 percent of this sector. In other sectors, like decorator telephone sets and facsimile machines, the new entrants and manufacturers not captive to the telephone companies have the major share.

Because of the lack of reliable data on the telecommuncations equipment market, we have not drawn any conclusions regarding the competitiveness of the market's structure. We note that FCC has decided to relax price/earnings regulation for AT&T's equipment offerings while still subjecting them to regulation under a separate subsidiary approach. This approach is discussed in chapter 6.

WILL THE COMMON CARRIER INDUSTRY BECOME WORKABLY COMPETITIVE?

Our analysis of the structure of the telecommunications service market, indicates that a competitive market does not now exist. The status of the equipment market is less clear. Both markets are experiencing the impact of rapid technological changes which has reduced economies of scale and expanded markets beyond the traditional telephone and telegraph services and the black dial telephone. These changes strongly suggest that a competitive market will continue to develop and raise the question of when particular markets and submarkets will be competitive enough that regulation of dominant carriers can be modified or relaxed.

We have attempted to develop some prognosis for future competitive developments through talks with officials at FCC, the Office of Technology Assessment, and the Department of Commerce's National Telecommunications and Information Administration, consultants in the telecommunications industry, and officials of the

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1/The data developed by the Office of Technology Assessment is based on shipments of terminal equipment units rather than revenues, as was used in our services market discussion. This data is divided into four broad supplier categories--manufacturers captive to telephone operating companies; long-term U.S. manufacturers not associated with a telephone operating company; new U.S. based terminal equipment entrants; and firms importing foreign equipment for sale in the United States.

2/Private branch exchanges are terminal equipment which allow for communications within a particular location. A typical exchange would be a switchboard used by a business or apartment building for handling communications on the premises.

established and other common carriers. These talks focused primarily on the services market. We discussed barriers to entry, expected merger activity, and potential new entrants. On balance, none of these factors will preclude the development of a competitive environment although they do suggest that competitive developments will not be rapid and the number of firms in the industry will probably never be large.

Barriers to entry

Apart from the legal restriction on entry, which FCC and the courts have relaxed for interstate communications, a major barrier to entry is the amount of capital required to construct a viable communications network. This barrier was cited by several officials we contacted. Its significance can be seen in the range of annual expenditures of the existing carriers. For example, AT&T spent about $11.3 billion in 1980 to maintain and improve its network. New entrants like MCI and Satellite Business Systems have reportedly spent about $350 million and $500 million, respectively, for their facilities. These high costs of entry have led many observers to suggest that the number of carriers who own their own facilities would never be very large and that it would take a considerable period of time before effective competition develops.

One former FCC official expressed the view that the amount of capital needed to get started might be reduced if carriers constructed regional rather than nationwide networks. This would increase the number of entrants owning their facilities. State Public Utility Commissions regulate entry into their States; therefore, to build a regional network, the carriers must overcome the legal entry barriers provided by State regulation. Further, other officials we spoke with expressed doubt regarding the viability of regional carriers because they felt only a nationwide network could attract sufficient customers to meet the costs of constructing a network. Concern was also expressed by several officials that increasing crowding of frequency spectrum for both terrestrial microwave and satellite facilities might limit the number of carriers owning their facilities.

The required amount of captial to provide resale (including value-added) services was generally viewed as considerably lower. Rapid growth and vigorous competition is anticipated among value-added carriers in the enhanced services submarket. The outlook for pure resale carriers--those carriers not adding value to communications services they offer but just taking advantage of discounts offered by carriers who own their facilities--was more guarded. Many observers felt resale carriers' dependence primarily on other carriers' facilities and pricing strategies for existence would make them something of a transitory presence in the market.

An additional crucial barrier to carriers seeking to enter the services market is interconnection to the local network and the charge which is assessed for this interconnection. This area is discussed in chapter 8.

Mergers and acquisitions

A pattern of mergers and acquisitions could reduce the absolute number of competitors in the services market, although it may serve to make the remaining competitors more viable. Already several mergers and acquisitions have occurred. Most prominent was the merger of GTE, the largest independent telephone company with Telenet, a major value-added carrier. Satellite Business Systems represents a partnership of Communications Satellite Corporation, International Business Machines Corporation, and Aetna Casualty and Surety Company. Other actions include the acquisition of 50 percent of American Satellite Co. by Continental Telephone Corporation.

Potential new entrants

Considerable attention has focused on new firms proposing to enter the telecommuncations industry in response to its expected rapid growth. One cited example is Xerox Corporation which has proposed a digital network (referred to as X-TEN) which will cover about 200 cities. This network will use satellite facilities for interexchange services and will use rooftop terrestial microwave facilities to bypass the local exchange network. Xerox, however, in May 1981 announced it would not pursue this network with further investment. Consequently, the future of this network is not clear. Exxon Corporation is also viewed as a potential market entrant as a logical extension of its involvement in the terminal equipment submarket.

FACTORS WHICH CAN FURTHER
THE DEVELOPMENT OF COMPETITION

Based on our review, we believe the trends toward competitive service and equipment markets are established. These trends reflect the impact of technological change on the telecommunications industry, and the subsequent decisions by FCC and the courts to allow new entry. In allowing new entry FCC has recognized the benefits of competition--increased innovation, the introduction of new techniques and services, potentially lower costs, and increased responsiveness on the part of the existing carriers. Having set the industry on the road to a more competitive structure, FCC needs to establish an industry analysis function to monitor the industry and the growth of competition.

If it wishes to endorse the trend toward competition, the Congress may want to amend the Communications Act to direct FCC to rely on competition to achieve the act's broad policy goals and to allow FCC to relax regulation for those carriers which it finds do not possess market power.

FCC needs an industry analysis function

FCC must be in a position to analyze information regarding market structure, barriers to entry, and other aspects of an analysis of the domestic common carrier industry. Such analysis, we believe, represents an important input into the establishment of appropriate regulatory policies and programs and initiating legislative change. For example, the regulatory constraints placed on a particular carrier should reflect the market power that the carrier possesses in the relevant markets and submarkets in which it operates. Where a carrier is dominant and the potential for abusing its market power exists, the Commission should continue to regulate. Conversely, where a particular firm does not possess market power the full range of regulatory requirements is not warranted. The particular regulatory approaches used--traditional price/earnings regulation, cost allocation requirements, separate subsidiaries and their attendant conditions--should flow from a comprehensive, ongoing analysis of the industry. Finally, the assessment of the success of policy initiatives to promote competition must ultimately rest on an analysis of their effects on the industry's structure--has the industry become more competitive?

The Economics Division in the Common Carrier Bureau is responsible for conducting and coordinating economic research required for the development of common carrier regulatory policies including such subjects as industry structure and competition. The division is also responsible for developing guidelines for evaluating the economic performance of the industry. These responsibilities, however, are not being carried out. For example, in developing the industry structure data presented previously, we found that no such information was being prepared or collected by the division or anywhere else in the Bureau. Division economists responsible for industry data collection told us that developing comprehensive market share data using FCC information would be difficult because in some cases detailed market data is not reported, and in other cases, such as for Domestic Satellite Carriers and value-added carriers, no system of accounts has been approved and, consequently, FCC receives no regular financial reports from these carriers. Beyond the collection of such basic data, we found that no group of individuals is engaged in analyzing the industry.

Economists in the Economics Division, analysts on the Program Evaluation Staff, and a former Bureau Chief have all acknowledged that this key function does not exist. The former Bureau Chief also stated that the lack of industry analysis in the Commission's decisions, in particular, the Second Computer Inquiry, has reflected the absence of this function. We agree. For example, the assessment of the competitiveness of the terminal equipment market in the Second Computer Inquiry was based largely on less than complete information. No data on relevant market or submarket shares was presented.

We believe the principal contributing factor to this situation has been the fact that the Economics Division has been in a state of turmoil over the past several years. There has been a continual turnover of Division Chiefs and prior to November 1980 no full-time Division Chief for over a year. In this leadership vacuum, Division economists have tended to become involved in projects which reflected their personal interests, and the industry analysis function has been neglected.

The former Bureau Chief had initiated an effort to improve this situation. This involved identifying the industry data collected by the Bureau and determining what information is necessary as part of an industry analysis process. A new quarterly report on carrier market structure and carrier financial conditions was developed and the first report was issued in May 1981. FCC has also taken some steps to consolidate in the Economics Division information on the various reports the Commission receives from the carriers.

While collecting information is an important first step, we believe the Bureau needs to establish a group responsible for ongoing analysis of the industry. This group's analysis would serve as the foundation for future Commission decisions on regulatory policies for dominant and nondominant carriers as well as a basis for evaluating the impact of Commission policies designed to foster competition.

Congress can facilitate competition's development by amending the Communications Act

According to the broad policy goals of the Communications Act, FCC is to regulate communications to make available a rapid, efficient communications service with adequate facilities at reasonable charges. FCC's decisions allowing competition have flowed from its determination that a competitive environment would facilitate achieving the act's policy goals. While these decisions have been sustained by the courts, several attempts have been made to legislatively limit the development of competition. In particular, the established carriers supported legislation in the 94th and 95th Congresses to affirm a regulated monopoly in all markets in which they operate. In recent years, however, these carriers have altered their view to an acceptance of competition as the appropriate long-run structure for the industry. Legislation introduced in the last Congress and the current Congress contain provisions which in essence would codify FCC's and the courts' decisions supporting competition.

If the Congress wishes to support the trend toward competition and endorse the decisions reached by FCC and the courts in favor of competition, we believe the Congress needs to amend title I of the Communications Act to direct FCC to rely on competition and the private sector to the maximum extent possible to achieve the overall goals of the act.

Where firms do not possess market power, we believe the kind of pervasive regulation applied to a dominant carrier is not warranted. FCC has recognized these facts in its Docket 79-252 proceeding and is attempting to relax regulatory requirements for competitive carriers. FCC is attempting this "deregulation" through what it believes are several novel interpretations of the Communications Act. Certain carriers like MCI or Southern Pacific Communications Co., which were found to not have market power would no longer be defined as common carriers and would no longer be subject to title II regulation. Other carriers, like Western Union, which we noted earlier in this chapter, have market power in certain market sectors but not others would still be defined as common carriers but FCC would "forebear" from regulating under title II the nondominant aspects of their business.

According to an attorney in the Policy and Program Planning Division controversy exists regarding whether FCC can take this proposed action, and several existing Commissioners have raised doubts about the appropriateness of this overall approach. Even if approved by the Commission this overall approach will likely be litigated over several years. Further, the "definitional" aspect may beget other problems. For example, under FCC's spectrum allocation rules, common carriers are given key portions of the frequency spectrum which are better in quality than other portions. The issue is, therefore, raised whether previously defined common carriers would still have rights to these portions of the frequency spectrum after the Commission had defined them not to be common carriers.

We believe that the thrust of the Commission's actions is correct. Deregulating carriers without market power will reduce the costs of regulation for these carriers and society as a whole. Further, as subsequent chapters will demonstrate, much needs to be done, including the more appropriate application of personnel resources, to improve FCC's regulation of dominant common carriers. By freeing nondominant carriers from title II regulation, FCC can simultaneously release scarce Common Carrier Bureau resources for regulation of dominant carriers. The Congress by amending title II of the Communications Act to allow FCC, upon a finding that it is in the public interest, to exempt any carrier from any or all provisions of title II will provide the certainty FCC needs to shift the focus of its regulation.

CONCLUSIONS

Domestic common carrier telecommunications is in the midst of an evolution--from a highly monopolized structure to a competitive structure. Rapid technological change has been at the heart of this evolution--reducing barriers to entry into the industry and expanding market opportunities for a variety of firms. FCC and the courts have reacted to the impact of technological change by removing regulatory restrictions on entry and, as a result, numerous firms have entered the industry.

We believe the trends toward competitive service and equipment markets are established. From our analysis, it does not appear that competition has developed to the point that the telecommunications services market can be considered competitive. Detailed analysis of whether domestic common carriers are dominant and possess sufficient market power that regulation should be applied or relaxed, however, needs to be done by FCC. To facilitate such analysis, FCC needs to establish an industry analysis group to monitor and report on developments in the industry and the growth of competition. This group would assemble and analyze information on which carriers were dominant and which were nondominant so that the appropriate regulatory programs and policies can be applied to these carriers. This group's analysis would also serve as a basis for measuring the effectiveness of FCC's policies designed to foster and encourage competition.

In the equipment market, competition in some sectors is more highly developed. Reflecting this situation, FCC has decided to relax price/earnings regulation for AT&T's equipment offerings while still subjecting them to regulation under a separate subsidiary approach. (See ch. 6.)

If the Congress wishes to endorse the trend toward competition and the decisions reached by FCC and the courts in favor of competition, we believe the Congress needs to amend title I of the Communications Act to direct FCC to rely on competition and the private sector to the maximum extent possible to achieve the overall goals of the act.

We believe deregulating carriers without market power is an appropriate regulatory approach which will reduce the costs of regulation for these carriers and society as a whole. By focusing its regulation on dominant carriers, FCC can optimize the use of its regulatory resources. The Congress can facilitate this shift in regulatory focus by amending title II of the Communications Act to allow FCC to exempt any carrier from any or all provisions of title II when it finds such exemption is in the public interest. By reducing the uncertainty surrounding FCC's ability to exempt carriers Congress would allow FCC to relax its regulation of nondominant carriers and focus its attention on dominant firms.

RECOMMENDATIONS TO THE CONGRESS

If the Congress wishes to endorse the development of competition, we recommend that the Congress

--amend title I of the Communications Act to direct FCC to rely on competition and the private sector to the maximum extent possible to achieve the overall goals of the act.

--amend title II of the Communications Act to allow FCC, upon a finding that it is in the public interest, to exempt any carrier from any or all provisions of title II.

RECOMMENDATION TO THE CHAIRMAN, FCC

We recommend that the Commission establish within the Common Carrier Bureau an industry analysis section, whose analyses should provide a framework for future Commission decisions for regulating dominant and nondominant carriers in light of changing market conditions and would enable the Commission to measure the effectiveness of its policies designed to foster and encourage competition.

CHAPTER 3

PRICE/EARNINGS REGULATION--

ITS APPLICATION BY FCC

To carry out its responsibilities for regulating telecommunications common carriers under the Communications Act of 1934, FCC has used a form of price/earnings regulation which relies on rate of return/rate base regulation. Under this system a regulatory agency attempts to simulate a competitive outcome by limiting a regulated firm's revenues to its cost of service, including a reasonable return on investment. This involves determining the firm's reasonable costs of plant (rate base) and expenses and the prices which it should charge for its products and services to cover its costs and provide a fair return to investors.

FCC's administration of rate of return/rate base regulation has focused on establishing rates of return. However, rate of return proceedings have been long and complex, leading some critics to suggest the possible use of modified procedures.

FCC has, on the other hand, paid relatively little attention to carrier investment costs and expenses. Apart from one large, formal investigation of AT&T's rate base and expenses, conducted in the mid-1970s, FCC has reviewed these items only on an informal "continuing surveillance" basis. Little effort, however, has been devoted to carrying out this surveillance. As a result, FCC has exercised little control over rate base and expense items and has not addressed many of the problems raised in the one formal investigation.

While we believe that FCC can take certain actions to improve its administration of rate of return/rate base regulation, we also recognize that because of the nature and magnitude of the tasks involved no such regulatory approach can ever be expected to fully simulate a competitive outcome. Further, while alternative regulatory approaches have been proposed, and some tried by State commissions (see app. IX), no one approach has yet emerged which seems clearly more effective than rate of return/rate base regulation.

As the industry becomes more workably competitive, relaxation of price/earnings regulation needs to be vigorously pursued. However, in the interim FCC will still need to continue its application of rate of return/rate base regulation to services not subject to effective competition and provided by dominant carriers.

To better enable FCC to carry out its regulatory responsibilities as a more competitive environment evolves, we believe that FCC can take several actions including:

--Initiating a proceeding to explore changes needed to facilitate and improve its process for setting a rate of return.

--Increasing the scope of its audit program.

--Coordinating with State regulatory commissions.

In addition, we believe the Congress needs to clarify FCC's regulatory authority by amending section 214 of the Communications Act of 1934 to give FCC explicit authority to require carriers to submit for approval plans for the construction of any facilities subject to its jurisdiction and to allow FCC to require carriers to file long-term facilities construction plans.

CONCEPTS OF PRICE/EARNINGS REGULATION

In industries where one firm has been able to achieve monopoly power, economic theory has suggested that the firm be subject to some form of price/earnings regulation. Without such regulation, the firm's natural profit-making incentives would be expected to lead it to charge higher prices and produce less output than if it were subject to effective competition. Regulatory intervention, thus, attempts to simulate a competitive outcome by restricting the firm's prices which should, in turn, lead to increased production.

Some form of price/earnings regulation has been frequently applied to firms which are considered public utilities--those which produce gas, electricity, water, and communications. Such regulation is often mandated under Federal or State law.

Such an approach is contained in title II of the Communications Act of 1934 which gives FCC the authority and responsibility for carrying out a price/earnings regulatory program for interstate communications common carriers. For example, title II contains a variety of provisions which may be used to constrain market power through control over prices charged; control over construction; prohibitions on discrimination in charges, practices, or services; and requirements dealing with terms of services.

The Communications Act does not explicitly set forth a specific price/earnings regulatory system which must be used by FCC. It does, however, contain the basic elements of a rate of return/rate base regulatory system, such as is frequently used to regulate public utilities. It is this system which FCC has used to regulate domestic common carriers.

Principles of rate of return/ rate base regulation

Under the Communications Act of 1934, FCC has attempted to limit the profits and review the operations of telecommunications common carriers through a system of rate of return/rate base regulation. Under this system, FCC tries to limit a regulated carrier's revenues to those necessary to cover its cost of service, including funds needed to pay reasonable interest payments and dividends to investors. The amount of funds which a carrier

is allowed to take in during a given year is called its revenue requirement.

A carrier's revenue requirement may be broken into two primary elements: (1) its legitimate business expenses--operating expenses, depreciation, and taxes--and (2) a fair return on the property which is used in providing services to the public. This latter amount can be computed by multiplying the net or depreciated valuation of the carrier's property (rate base), times its cost of securing capital (rate of return).

To determine a firm's revenue requirement, a regulatory agency must, therefore, be involved in two major activities. First, it must determine what constitutes a fair rate of return. Second, it must oversee rate base and expense items to ensure that they represent only those costs which the firm needs to incur to provide service.

The rate of return which a firm is allowed to earn should be equivalent to that earned by other firms with comparable business risks. In determining this return the agency must take into account three main factors--the firm's cost of debt, its cost of equity and its capital structure. Establishing the firm's cost of equity--the return which should be paid to stockholders--is generally the most difficult task.

Determining a fair rate of return will, however, not alone ensure that a firm's rates are reasonable. The agency must also determine which investments and expenses incurred by the firm are actually necessary to provide service to the public. (See app. V.)

After the firm's revenue requirement is determined, rates for the various services offered by the firm must be established to realize the total amount of revenue required. These rates are, in the case of telecommunications firms, contained in tariffs which are filed with FCC. To protect all of the firm's customers, the agency must examine these rates, otherwise the firm would be free to price discriminate--i.e., to price its services to arbitrarily favor one class of customer over another. The incentives for a firm to engage in such price discrimination are enhanced when it faces competition in certain market sectors. (See ch. 4.)

Problems with rate of return/rate base regulation

Although rate of return/rate base regulation has been widely used by regulatory agencies, questions exist concerning whether it can ever come close to achieving its goal of keeping rates at a competitive level or even whether the benefits of such regulation outweigh its costs. For a rate of return/rate base regulatory system to function effectively, the regulatory agency must supervise the firm's costs as well as constrain its profits. In

addition, the agency must pay attention to the firm's quality of service as well as its performance--for example, its innovation and efficiency--since the firm may lack the spur of effective competition in all markets.

Given the size of many monopoly firms, particularly one as large as AT&T, the task confronting the agency is formidable especially since costs and market conditions change over time as the result of technological change or change in consumer demand, for example. Also, the imposition of profit constraints on a firm may cause its incentives to differ from those of a competitive firm, thus, exacerbating the need for regulatory supervision of its activities. Among the undesirable incentives which economists have attributed to limiting a firm's profits are the following:

--The firm may excessively expand its rate base.

--The firm may be less cost conscious.

--The firm may be less innovative.

--The firm may try to evade regulation and enter unregulated or loosely regulated markets.

These incentives are discussed in appendix VI.

FCC's EFFORTS TO ESTABLISH AND MONITOR RATES OF RETURN

In administering its rate of return/rate base regulatory program, FCC is responsible for establishing rates of return for carriers under its jurisdiction and for monitoring carriers' actual rates of return between formal rate proceedings. Through these efforts, FCC attempts to ensure that a carrier has the opportunity to obtain the revenues which it needs to cover its cost of service without allowing it to earn excess profits. FCC's efforts in this regard have focused primarily on the interstate operations of AT&T. Carriers' intrastate operations are regulated by the States.

Establishing rates of return--a complex, lengthy and costly process

Since 1965, FCC has been involved in four proceedings to establish a fair rate of return for AT&T and its associated operating companies' interstate and foreign operations--each of which involved the use of trial like evidentiary hearings. These proceedings--Dockets 16258, 19129, 20376, and 79-63--were initiated

in 1965, 1970, 1975, and 1979, respectively. 1/ Before that time, AT&T's rate of return was set on an informal basis.

In each of these four proceedings, it has taken FCC about 1 to 2 years to issue a final decision. The most recent proceeding, Docket 79-63, was initiated in March 1979, when AT&T filed a petition calling for an increase in its authorized rate of return. An initial decision was issued by an FCC administrative law judge on January 30, 1981, and the Commission's final decision was made on April 6, 1981.

Rate of return proceedings have been complex, lengthy, and costly. For example, during the hearings in connection with phase I of Docket 19129, which dealt with rate of return issues, some 33 volumes of transcript were taken. In Docket 20376, which focused almost exclusively on AT&T's cost of equity, the record consisted of over 1,400 pages of transcript and some 100 exhibits.

An FCC official told us that they had not documented the costs incurred by FCC in carrying out rate of return proceedings. We were told, however, that as of March 1981 approximately 53 person-months had been spent on Docket 79-63, mostly at the GS-15 level. 2/ This estimate did not include time spent by the administrative law judge assigned to the proceeding or time spent by Common Carrier Bureau staff involved in preparing a final decision. In addition to staff time, FCC spent $70,000 on consultant services.

Although rate of return proceedings have been long, complex, and costly, a number of officials we spoke with believed that they were necessary. The primary reasons cited for using such formalized proceedings for determining rates of return are that they are needed to ensure that the carrier receives "due process" and "equal protection of the law" 3/ and they allow detailed examination of all evidence presented by all interested parties.

A number of officials we spoke with, however, were critical of the rate of return setting process, noting that:

1/The basic process followed by FCC in conducting a rate of return proceeding is described in appendix VII.

2/A GS-15 employee presently earns approximately $45,000-$50,000 per annum. Fifty-three person-months at an average salary level of $47,500 would total approximately $210,000. The agency would, however, also incur related overhead costs.

3/The constitutional rights of due process and equal protection of the law have been cited by the U.S. Supreme Court in connection with rate cases. See, for example, Chicago, M. & St.P.Ry. Co. v. Minnesota, 134 U.S. 418, 458 (1889).

--The process produces no adequate standards which may be used to determine from the evidence presented which evaluation of a fair rate of return is correct.

--FCC's determination of rates of return applies only to interstate operations. Similar proceedings must also be conducted before State commissions in which the carrier operates.

--The process fails to focus on important aspects of carrier performance, such as efficiency and productivity.

Objective standards to determine rates of return do not exist

In spite of the time and effort which has gone into rate of return proceedings both before FCC and other similar regulatory commissions, no objective and unequivocal method for correctly determining a firm's rate of return has emerged. Instead the Commission must rely on its judgment to evaluate the presentations of various parties to the proceeding and to weigh their merits. Such a task is far from simple since, as economist Alfred E. Kahn has noted, participants in such proceedings "have become increasingly skilled and assiduous in developing prolonged, complex, and inconclusive testimony" on the proper measurement of a firm's cost of capital. 1/

Since an unequivocal determination of a carrier's rate of return cannot be reached even after lengthy hearings, some disagreement exists concerning whether the existing rate of return procedures are necessary or whether some alternative means for setting a rate of return might be used. In its decision in Docket 20376 the Commission stated that it believed the information contained in the hearing record was indeed useful in allowing it to reach a decision on AT&T's rate of return. For example, it stated that while no one method for determining the appropriate cost of equity can be determinative, presentations of alternative methods serve as "useful tools" in enabling it to use its judgment.

Other persons we spoke with believed that some modifications in existing rate of return procedures are possible. For example, a former Common Carrier Bureau Chief believed FCC could streamline the rate of return setting process through the use of a rulemaking which could narrow the areas of contention and establish a specific policy or procedure for setting carriers' rates of return. Alternative approaches which could be considered include the establishment of a "risk premium"--an additional percentage return which a carrier would be allowed to

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1/Alfred E. Kahn, "The Economics of Regulation: Principles and Institutions." New York: John Wiley & Sons, Inc., 1970.

earn based on the relative risk associated with the carriers' securities--which would be added to the return on more-or-less risk free investments, such as Government bonds, to determine the carrier's rate of return, or a requirement that all parties in rate of return proceedings file their estimates of cost of equity in a format designated by the Commission.

In 1976, the Federal Power Commission (currently the Federal Energy Regulatory Commission) had sought to expedite its own consideration of rate of return cases by establishing a uniform format to determine the cost of equity capital for natural gas pipeline companies and public utilities as well as establishing a set of evidentiary criteria to be used in fixing rates of return. This would have required parties to present their estimates of cost of equity capital in terms of a discounted cash flow format, 1/ although alternative methods could be submitted in addition. A Federal Energy Regulatory Commission official told us that this policy was intended to facilitate the Commissioners' ability to make rate of return determinations. However, due to opposition to the policy change, no action has been taken on it.

An economist in the Common Carrier Bureau's Economics Division who is involved in rate of return activities told us that while he did not believe FCC could alleviate the need for evidentiary hearings in rate of return cases entirely, he believed that FCC could take action to reduce their frequency. He believed that FCC could through a rulemaking establish a procedure whereby specific models could be used to monitor the cost of capital between formal rate of return proceedings. As changes in cost of capital occurred, modifications could be made in a carrier's rate of return. He estimated that the use of such an approach could have delayed the need for the Docket 79-63 rate of return proceeding by approximately 1 to 1-1/2 years.

Rate of return responsibility divided between FCC and State commissions

Another limitation of the present rate of return setting procedures is that FCC's determinations apply only to a carrier's interstate operations. Each of the State commissions in which a carrier operates must also make rate of return determinations for intrastate operations under its jurisdiction. This can be costly. For example, AT&T told us that it could not determine the costs

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1/The discounted cash flow formula which the Commission proposed to use was:

$$\text{Rate of return on equity capital} = \frac{\text{Annual dividend}}{\text{Market price}} + \text{Growth rate of dividends}$$

involved for all of its companies to participate in rate of return proceedings; however, AT&T estimated that it would spend about $1,200,000 in 1980 on fees for outside witnesses and consultants in such proceedings. AT&T also stated that most of the time of its Financial Requirements Section is spent on such matters. The salaries and expenses for this section totaled about $525,000 in 1980.

While consolidation of such rate of return proceedings would appear to be desirable in terms of eliminating duplication of effort, one carrier noted several barriers which would first have to be overcome:

--Different State commissions use varying standards and procedures in conducting rate of return cases.

--Earnings vary from jurisdiction to jurisdiction and, thus, the need for rate increases will occur at different times in different States.

--Different operations experience different risks, and therefore require different rates of return.

While other parties we spoke with agreed that it would be difficult to consolidate rate of return hearings, some suggested that greater coordination was possible between FCC and State commissions. Potential opportunities for increased coordination in this area which were suggested included exchanging rate case information and establishing a Federal-State Joint Board which would collect cost of capital information. The information could then be used by various commissions in setting rates of return.

Rate of return proceedings do not focus on performance

A further problem which has been raised with the existing rate of return setting process is that the process fails to effectively focus on what should be a major concern of regulatory policy--the performance of the firm. While the establishment of a fair rate of return can effectively limit a firm's profits while enabling the firm to obtain needed capital, it does little to ensure cost efficiency. It may instead distort a firm's natural incentives and encourage inefficient investment.

The fact that FCC's rate of return procedures have not effectively focused on carrier performance was noted by two Commissioners in FCC's first AT&T rate of return proceeding, Docket 16258. One Commissioner noted that while the record in the proceeding consisted of "the traditional stuff of ratemaking decisions," it did not get at the heart of the matter--providing the company incentives to achieve efficiency and economy in its operation. Another Commissioner also pointed out the need for greater focus on AT&T's performance and questioned whether that

end could be accomplished directly--for example, through the use of some type of performance standards rather than "by beating around the bush of conventional public utility financial issues."

In the subsequent rate of return proceeding, Docket 19129, FCC used a procedure which was ostensibly intended to deal with AT&T's performance to some extent by encouraging AT&T efficiency and productivity. In this proceeding, FCC used what was termed a "conscious use of regulatory lag." This allowed AT&T to earn an additional 0.5-percent rate of return if it could be achieved through additional efficiency or productivity gains. 1/ Specifically, in Docket 19129, FCC allowed AT&T to file tariffs designed to produce an overall 8.5-percent rate of return. However, FCC stated that if AT&T were able to achieve a 9-percent rate of return through efficiency and productivity gains, FCC would take no regulatory action. FCC also established a 0.5-percent range in AT&T's rate of return in Docket 20376.

While AT&T has been able to earn a rate of return in excess of the minimum level established by FCC, FCC has not taken any action to determine whether such returns have resulted from improvements in efficiency and productivity or from other factors. FCC officials recognized, however, that such increases in AT&T's rate of return could result from changes in market conditions or inaccurate tariff filings, as well as from productivity and efficiency increases. At the same time, they acknowledged that no investigation has been undertaken to determine the reason for such increases. A former Common Carrier Bureau Chief stated that he believed the 0.5-percent allowance in the rate of return was not really aimed at increasing efficiency and productivity, but rather it was intended to simply allow FCC more time between rate of return cases.

In a September 1979 Hearing Order in AT&T's most recent rate of return proceeding, Docket 79-63, FCC indicated that a range for AT&T's rate of return was not at issue in the proceeding. Rather, a separate proceeding would be initiated to consider an allowance for efficiency and productivity. As of August 1981, no such proceeding had yet been initiated. In its April 1981 decision in Docket 79-63 the Commission decided, however, to allow a 0.25 percent range in AT&T's rate of return. This range was, however, established to reflect the volatility in current economic and financial conditions--rather than being tied to productivity and efficiency.

1/In Docket 16258 FCC also allowed a 0.5-percent range in AT&T's rate of return; however, its order did not specify that AT&T could only achieve the upper level through efficiency gains.

Common Carrier Bureau officials told us that they believed an examination of AT&T's productivity and efficiency would be a worthwhile endeavor. In this regard, the Economics Division Chief and Economic Studies Branch Chief stated that while such an investigation may not lead to the development of any hard and fast productivity measures, they believed that it would nonetheless be valuable in assessing the effects of regulation on AT&T's performance. A Division economist involved in rate of return activities believed, however, that FCC could come up with productivity and efficiency measures to be used in regulating AT&T. 1/

FCC's monitoring of the rate of return--what policy is appropriate?

In addition to establishing a fair rate of return for AT&T in formal rate of return proceedings, FCC also attempts to monitor the carrier's realized rates of return between rate proceedings. Various other financial information is also collected. The aim of the activity is to determine whether AT&T has exceeded its authorized rate of return or whether changes in cost of capital necessitate the initiation of a rate proceeding if, for example, a significant drop in the cost of capital should occur. In 1979, an occurrence took place which focused attention on this function and raised questions concerning the policies which FCC should follow in carrying out its rate of return responsibilities. This was FCC's determination that AT&T had apparently exceeded its authorized rate of return in 1978.

AT&T's 1978 excess earnings

In early 1979 FCC determined that AT&T appeared to have exceeded its authorized rate of return as specified in Docket 20376. In that Docket FCC had authorized AT&T an overall rate of return of 9.5 percent plus an additional 0.5 percent which could be achieved through increased productivity and efficiency. According to FCC a report issued by AT&T in January 1979 showed its ratio of net earnings to average net investment for 1978 was 10.22 percent. FCC stated that this equated to an excess earnings of $99 million above the authorized 10 percent maximum. Further study of the matter led to questions, however, concerning whether the figure contained in the report was accurate or whether a different figure was correct.

In October 1979, FCC issued a notice of inquiry into the excess earnings issue. In the notice FCC asked for comments on the following questions:

1/Common Carrier Bureau officials told us in July 1981 that they plan to explore carrier productivity and efficiency in connection with the application of FCC's section 214 authority. This issue is to be taken up in a planned extension of the Competitive Carrier Rulemaking (Docket 79-252).

--What is the appropriate time period over which FCC should consider AT&T's earnings--a calendar year or some other period?

--What measurement of AT&T's rate of return should FCC use?

--Had AT&T exceeded its authorized rate of return for 1978 and, if so, by what amount?

--What action, if any, should FCC take regarding any excess earnings?

In the notice, FCC also discussed more broadly the policies it should follow in those instances in which carriers earn above their allowed rates of return. For example, FCC questioned whether the rate of return prescription should be viewed solely as a "target" earnings rate which individual tariffs would be designed to achieve and, if so, whether it should prescribe tariffs if the earned rate of return varied from the prescribed rate of return. It also asked whether a rate of return prescription should provide an upper limit to the earnings of a common carrier with any excess revenues being returned to ratepayers.

As of August 1981, the Commission had yet to issue a decision on what action it will take regarding the excess earnings. Some FCC officials we spoke with, in this regard, believed that a lack of Commission action on this proceeding could undermine the credibility of their rate of return regulatory program.

FCC's REVIEW OF RATE BASE AND EXPENSE ITEMS

FCC's efforts to review rate base and expense items during the past decade have focused around a single proceeding--phase II of Docket 19129. In this Docket FCC attempted to formally and comprehensively investigate AT&T's rate base and expenses as well as other aspects of its operations. Both before the initiation and after the termination of this Docket, FCC has instead used an informal "continuing surveillance" approach for rate base and expense analysis. Under both approaches FCC has experienced considerable difficulty in establishing any meaningful oversight over AT&T's operations.

Continuing surveillance

Several years after its creation, FCC adopted a program of continuing surveillance to use in regulating interstate telephone rates. This program was designed to use informal negotiation between the FCC and AT&T in lieu of formal rate cases. It required AT&T to submit various reports and applications to the Commission, including applications to construct interstate facilities. In addition, FCC maintained field offices which were responsible for interpreting and monitoring compliance with accounting requirements and prescribing depreciation rates.

In October 1965, however, the Commission began a formal investigation into AT&T's charges for interstate and foreign communications services. It initiated Docket 16258 which was intended to examine a wide range of matters, including the rate of return required by AT&T, the amounts properly includable as rate base and expense items, and other aspects of AT&T's operations. Docket 16258 ultimately did encompass an investigation of AT&T's fair rate of return; however, a formal review of rate base and expense items was, in effect, postponed to a subsequent proceeding--Docket 19129, phase II.

Docket 19129--phase II

Docket 19129 was initiated on January 20, 1971, to investigate the lawfulness of the charges of AT&T and its associated companies for interstate and foreign communications service. The investigation was divided into two phases. Phase I was limited primarily to the determination of a fair rate of return on AT&T's interstate services. Phase II was aimed at other aspects of AT&T's operations, including an investigation of AT&T's revenue requirement. 1/

There were approximately 50 FCC staff conducting the investigation--consisting of Common Carrier Bureau personnel and part-time consultants. AT&T supplied the staff with over one million pages of documents and internal records during the investigation. Hearings were also held periodically during 1974 and 1975 during which some 16,000 pages of transcript were recorded and almost 16,000 pages of exhibits presented. In addition, FCC awarded several outside contracts to study AT&T operations. Cost of participation were, according to FCC, approximately $4 million for the FCC Trial Staff and almost $6 million for AT&T.

The overall proceeding lasted over 6 years. An initial decision was issued by the presiding FCC administrative law judge in July 1976 and the Commission's final decision was adopted in February 1977.

FCC's investigation of AT&T's revenue requirement included an examination of various plant and expense accounts as well as a review of such items as AT&T's construction program, the utilization of the interstate telephone network, and AT&T's internal audit program. In carrying out the investigation, FCC did not, however, attempt to perform a complete audit of AT&T. Therefore,

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1/The two other major areas considered in phase II dealt with (1) the relationship between Western Electric and the rest of AT&T and (2) AT&T's long-distance (MTS) rate structure.

the dollar amounts reported by AT&T for its plant items were generally accepted as accurate. 1/

Lack of past oversight hampers FCC's investigation

In spite of the time and effort expended during phase II FCC experienced considerable difficulty in determining the reasonableness of AT&T's rate base and expense items--particularly those involving the largest expenditure of funds. As recognized by FCC throughout the proceeding, these problems were greatly compounded by the lack of previous FCC oversight of such items under its continuing surveillance program. This is clearly illustrated by FCC's attempts to deal with AT&T's construction program, its utilization of the interstate network and its maintenance expenses. 2/

AT&T's construction program

FCC's investigation of AT&T's construction program during phase II revealed that past regulatory oversight had been inadequate and more extensive review would be required in the future. In his initial decision in phase II, the presiding administrative law judge concluded that neither FCC nor State public utility commissions had exercised the necessary scrutiny over AT&T's construction expenditures. This dearth of review of construction expenditures by the responsible regulatory agencies, he believed, precluded them "from acting responsibly and decisively to problems as they arise." In this regard, he added that reviews by most State commissions were, at best, little more than informal discussions between commission staffs and company personnel and that FCC review was, seemingly, even less in depth. In its final decision, the Commission agreed that more effective review of the construction program was needed in the future.

Network utilization

The inadequacy of past FCC review also hampered the Commission's ability to deal in Docket 19129 with problems relating to AT&T's utilization of the interstate telecommunications network.

1/During the test year of 1972 used in phase II, AT&T's interstate rate base, as specified in the Commission's final order, totaled approximately $15.4 billion and its expenses approximately $5.3 billion. In 1980, AT&T's interstate rate base and expenses, including taxes, totaled approximately $29.2 billion and $13.7 billion, respectively.

2/FCC's actions and problems relating to various other rate base and expense items are discussed in appendix VIII. Issues relating to AT&T's depreciation expense and its costs for installing telephones and other station apparatus are discussed in chapter 7.

While the record established during the proceeding indicated that the network had been underutilized during the test year of 1972, FCC declined to take retroactive action since it believed its own lack of oversight placed with it some responsibility for the problem. Again FCC called for increased future oversight.

Because AT&T's efficiency in using the interstate toll network directly impacts its rate base, regulatory oversight is needed to ensure that the network operates at its lowest cost and most efficient level. Such oversight includes a review of service standards and utilization objectives developed by AT&T and its adherence to them. If service standards are too high or network utilization too low, an over-investment in facilities would occur which would, in turn, increase the carrier's rate base and revenue requirement. If, on the other hand, service standards are too low or utilization too high, service problems could occur. Among other things, this could result in increased congestion of facilities, particularly during hours of peak usage, which would reduce a customer's ability to successfully complete a telephone call.

In Docket 19129, FCC questioned both the utilization objectives established by AT&T and its actual utilization of the network. It noted, in this regard, that AT&T had not justified its network utilization standard as being reasonable for effective utilization of its interstate toll network. FCC also asserted that actual utilization of the network had been far below even the objectives which AT&T had set. To compensate for this underutilization, the staff had recommended to the administrative law judge a disallowance of $305.7 million from AT&T's rate base. While AT&T did not dispute the conclusion that the network had been underutilized, it argued that such underutilization had occurred because high growth rates in demand for service which had been forecast did not materialize.

In its decision the Commission accepted the conclusion that the interstate telephone network had been underutilized; however, it determined that a retroactive disallowance of funds in the rate base should not be made. The Commission stated that while AT&T was partly responsible for the underutilization, because of its responsibility for facilities authorization under section 214 of the Communications Act, 1/ it must also bear a portion of the blame. In this regard the presiding administrative law judge had noted that neither the Commission or its staff had ever conducted an in depth study of network utilization. Thus, he believed retroactive criticism in this matter was warranted only on a showing of arbitrary or capricious management.

1/Under section 214, before constructing or extending a communications "line," carriers must obtain from FCC a certificate that such action serves the public convenience or necessity.

Although it declined to take retroactive action, the Commission stated that the issue of network utilization was vital and increased regulatory vigilance in the future was needed. The Commission directed the staff of the Common Carrier Bureau to develop regular reporting requirements and changes to the section 214 authorization procedures which would permit better oversight of network management and utilization. In the interim, it also required AT&T to demonstrate as part of its regular section 214 justification, that any proposed addition to the network would not exacerbate underutilization of the network and to take remedial action to correct that which existed.

Maintenance expense

FCC's difficulty in reviewing rate base and expense items was further demonstrated in its investigation of AT&T's maintenance expenses. Maintenance expenses represent the largest category of interstate operating expenses--totaling about $1.3 billion in 1972 or about 31 percent of all expenses (excluding taxes). Although the Commission concluded that AT&T had not demonstrated the reasonableness of such expenses, it found that evidence presented in the proceeding was insufficient for it to disallow any expenses from AT&T's revenue requirements.

In its presentation, FCC's staff noted several problems relating to AT&T's expenditures for maintenance expenses:

--Maintenance expenses had increased at a faster rate than average plant from 1966 to 1973.

--Certain maintenance functions' productivity had been decreasing.

--AT&T's operating companies maintenance expenses were increasing at widely differing rates.

In addition, the staff maintained that unless AT&T adequately justified maintenance expenses they should be disallowed.

In its decision, the Commission agreed that AT&T had not "in any sense" demonstrated the reasonableness of its maintenance expenditures. Rather, it said

> "* * * the sole evidence AT&T offered was the existence of its maintenance accounts and the bald assertion that they were reasonable and necessary to the rendition of interstate telephone service."

The Commission found, however, that the staff had not developed evidence which was sufficient to demonstrate imprudence on the part of AT&T--noting that the staff had relied on an examination of AT&T expense ratios rather than challenging the accuracy of maintenance figures.

In his initial decision the presiding administrative law judge also concluded that the staff had "put too many eggs in one basket" in relying on an expense ratio analysis. He went on to note that the problem of understanding and evaluating the prudence of maintenance expenditures was both complicated and somewhat arcane in the sense that a great deal of subjective management judgments were involved, and there was probably no one on the Commission's staff with a sufficient combined background of engineering, accounting, and technical management needed to fully grasp and comprehend the subject. He added that until the Commission could find or train the proper experts, it would obviously be at a marked disadvantage in the performance of its regulatory responsibilities in the particular area of maintenance expenses.

The Commission stated that greater certainty in the area of maintenance expense was needed. Toward this end, it required AT&T to submit an affirmative plan for monitoring the performance of its maintenance program. In August 1977, AT&T filed such a plan with FCC. However, as noted on page 46 little if any further analysis of this area has been undertaken by FCC.

The proceeding's effectiveness and future plans

Both the Commission, in its final decision, and the administrative law judge, in his initial decision, questioned the effectiveness of Docket 19129, phase II, and set forth proposals for future procedures to deal with rate base and expense items and other aspects of AT&T's operations. In general, both agreed that the proceeding had been too broad, and that a different approach was needed in the future.

The administrative law judge believed that there was promise in a "continuing surveillance" approach to regulation, although FCC's administration of such an approach had been deficient in the past. In this regard, he cited a 1973 report by the Administrative Conference of the United States which found that the continuing surveillance as practiced by FCC was a "misnomer," since the Commission had little mastery of the subject it purported to scrutinize. He added that it seemed that since the 1930s "there never was a realistic intent on the government's part to regulate AT&T and the other common carriers in the telecommunications field."

To regulate AT&T in the future, the judge called for a regulatory program which would include:

--adopting rules and regulations prescribing formal "audit" procedures on a periodic basis of all carriers, followed by formal reporting procedures with audit reports retained in a public file;

--designating hearings, as necessary, on narrow or restricted issues; and

--scheduling conferences from time to time to allow participation by consumers, trade suppliers, and other parties.

In addition, he called for FCC to employ or train an adequate number of specialists in all disciplines relevant to its responsibilities. He also advocated improvements in FCC's data collection activities. In this regard, he stated that a wholesale review of FCC's Uniform System of Accounts was an absolute necessity. FCC's efforts to revise the Uniform System of Accounts are discussed in chapter 5.

In its decision, the Commission favored a somewhat different approach. It stated that, "where appropriate, future major cases should be conducted first with a general rulemaking to establish major principles." Once general policies had been established, implementation of them could be carried out on a case-by-case basis using formal or informal adversary proceedings or partial audits.

Regarding the administrative law judge's recommendation for increased auditing by FCC, the Commission noted that audits could be used to determine areas of carriers' operations which require further investigation. However, it did not believe a complete audit would be an appropriate or efficient way to determine the reasonableness of AT&T's rate base or expenses or the costs associated with providing individual services. Rather, it stated a more reasonable approach would be to audit only those services or areas in which "a significant question or dispute has arisen."

FCC's current program for monitoring rate base and expense items remains a misnomer

Since the conclusion of Docket 19129, phase II, FCC's review of rate base and expense items has once again been conducted on a "continuing surveillance" basis. However, relatively little time and attention has been devoted to this surveillance. While FCC has taken action to address some of the concerns raised in Docket 19129--such as increasing oversight over network operations and revising the treatment of station connections and asset retirements 1/--it has done little or nothing on many others. Thus FCC has fallen far short of the agenda which it established for itself in Docket 19129 to exercise needed oversight and control over AT&T's interstate revenue requirements.

Responsibility for reviewing rate base and expense items is divided primarily among three divisions within FCC's Common Carrier Bureau--the Economics Division, the Domestic Facilities

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1/FCC actions relating to station connections and asset retirements are discussed in chapter 7.

Division, and the Accounting and Audits Division. Other divisions in the Bureau are involved only on an ad hoc basis.

Economics Division

Primary responsibility for reviewing rate base and expense items within the Economics Division has been assigned to the Cost Analysis Branch. Among the responsibilities assigned to it are the following:

--Develop methods, procedures and standards for testing the reasonableness of investment costs and expenses reported by communications common carriers.

--Continually review and compare investment and expense cost data reported by carriers. Identify and investigate deviations from cost standards and initiate or recommend corrective action.

--Monitor continually components and amounts in the rate bases of carriers. Identify areas where the items included appear unreasonable or inappropriate and initiate or recommend appropriate action.

--Develop principles concerning carrier rate base and structure for use in tariff review and rate investigations. Review the general level of carrier rates, rate base and expenses and recommend areas requiring further investigation, as appropriate.

--Develop, in coordination with the Accounting and Audits Division, information requirements for costs and rate base analysis.

During our audit work, a formal Cost Analysis Branch did not, however, exist within the Economics Division. Throughout most of calendar year 1980 this branch and the Economic Studies Branch were without chiefs and the Division was without a full-time chief. As a result, we were told work was being carried out in four informal working groups, one of which was assigned cost analysis responsibility. Only one or two persons were involved, however, in cost analysis activities.

Economics Division officials in the cost analysis group told us that no ongoing program for monitoring rate base and expense items existed within the Division. While a Division economist said that some work has been done within the Bureau relating to rate base issues raised in Docket 19129--such as facilities construction, station connections, and asset retirements--no overall review has been conducted. He added that, except for depreciation, no analysis of AT&T expenses has been undertaken--noting, in this regard, that nothing had been done by FCC to address the concerns raised in Docket 19129 regarding AT&T's maintenance expenses. In general, he said that most of the cost analysis group's time had been spent on cost of capital and depreciation issues.

The previous Cost Analysis Branch Chief told us that little or no rate base or expense analysis had been conducted in the Branch during his tenure as well. He said that, in essence, the Branch had never really functioned as intended. Instead, personnel had been primarily involved in working on "crash dockets" dealing with other issues.

Economics Division officials including the present and previous Division Chiefs cited as a primary reason for not carrying out rate base and expense analysis functions, the inherent difficulty of such tasks. In this regard the Economics Division Chief said that he was not optimistic about FCC's ability to perform rate base and expense analysis particularly for a firm the size of AT&T. Consequently, he was unsure what would be done to carry out these functions in the future.

In addition to the inherent difficulties in carrying out rate base and expense analysis, Division officials pointed out several other problems which had hindered their efforts. One frequently cited problem was that the Division was without full-time leadership for over a year. In this regard, both the present and a former Division chief agreed that the Division had not functioned up to par and needed to be pulled back into the mainstream of the Bureau's regulatory activities.

Another often mentioned problem was the lack of intrabureau coordination, particularly between the Economics and Accounting and Audits Divisions. Officials including the present and former Economics Division Chiefs told us that animosity existed between the Divisions for a variety of reasons--including disputes over how to handle revisions of the Uniform System of Accounts and, thus, little coordination had taken place. The Economics Division Chief told us, in this regard, that he believed coordination between the two divisions was essential and he planned to initiate action to improve their relationship in the future.

Domestic Facilities Division

The Domestic Facilities Division is responsible for administering FCC's responsibilities under section 214 of the Communications Act of 1934. The Division's functions include developing policy and procedures for authorizing and regulating the domestic transmission facilities used by interstate common carriers. This includes authorizing AT&T's "blanket application," which contains its facilities construction proposals for a given year required under section 214 of the Communications Act.

The Division is also responsible for maintaining general oversight over the interstate telecommunications network. To accomplish this, a Network Analysis Branch has been established within the Division. Its responsibilities include studying the nationwide telecommunications network to determine the nature of

its operation and the methods by which the carrier determines the need for new or additional facilities and providing support and recommendations for the development of facility authorization programs designed to reduce unnecessary investment in facilities, taking into account network efficiency and utilization, among other factors.

Discussions with a recently resigned Domestic Facilities Division Chief, the Network Analysis Branch Chief, and other Division officials revealed, however, that while some progress has been made, problems in determining the reasonableness of facilities construction and network utilization cited in Docket 19129, phase II still exist. A primary reason cited for this was the difficulty in understanding a subject as broad and complex as the operation of the interstate telecommunications network, particularly in light of FCC's past lack of oversight in this area.

In this regard these officials stated that FCC recognized in Docket 19129 the difficulty in attempting to regulate AT&T's facilities investment retroactively. Thus, it determined that a more prospective approach should be applied. To accomplish this, in 1975 the Common Carrier Bureau established a network analysis function, which was charged with developing an understanding of the interstate telecommunications network. In 1979 this activity was expanded from two positions to eight positions when a formal Network Analysis Branch was formed.

The Network Analysis Branch Chief told us that FCC has generally reviewed AT&T's facilities on an informal basis rather than in the context of formal proceedings. He said that they have, on numerous occasions, asked AT&T questions about its facilities' operations, which he believed, in some cases, have led AT&T to improve its facilities' plans. He acknowledged that such a claim would, however, be difficult to document. The Branch Chief also believed that some progress had been made toward improving FCC oversight over the utilization of the interstate telecommunications network, as the Commission ordered in Docket 19129. He said, however, it would be a good distance in the future before FCC could evaluate the service standards and utilization methods used by AT&T to the extent necessary for it to be able to exercise any real control over AT&T's facilities applications.

In addition to the complexity of such a review, another factor which may affect the Branch's effectiveness in regulating AT&T's facilities investment is the language presently contained in section 214 of the Communications Act. Under section 214, FCC is given authorization authority over interstate communication "lines." Generally, FCC has interpreted this authority narrowly--to cover only interstate transmission facilities and to exclude other facilities, such as switches. Under such an interpretation FCC has facilities authorization authority over only a very small

percentage of AT&T's rate base-approximately 3 to 5 percent according to one FCC official's estimate. 1/ Although Bureau officials including the Network Analysis Branch Chief believed that FCC might be able to assert jurisdiction over other types of carrier facilities including switching, some uncertainty exists. In addition, one official said no attempt has been made to do so because FCC is reluctant to try and expand its authority because it lacks the resources necessary to review such additional facilities.

Officials including the Network Analysis Branch Chief and a former Division Chief, said that a further problem relating to the facilities review process under section 214 is that facilities which are submitted for approval have been decided on by the carrier several years earlier. Without understanding the decisionmaking process which led to the application, it was difficult for FCC to determine the need for the facilities and the reasonableness of their cost. To better carry out their responsibilities, they said FCC needed to get more involved in the facility planning process.

According to the Network Analysis Branch Chief FCC is in the process of evaluating its facilities authorization program and attempting to formulate procedures which will better enable them to carry out their responsibilities in the future. He said a Notice of Proposed Rulemaking will be issued on this subject, although he did not know when this would occur.

Accounting and Audits Division

This Division is responsible for administering FCC's Uniform System of Accounts; reviewing and approving the carriers' accounting reports, reviewing and summarizing the carriers' financial and operating reports; auditing the carriers' financial and operating practices, procedures, and records; and recommending to the Commission annual carrier depreciation rates. 2/ The Division has one field office located in New York City to aid it in carrying out its audit function.

The Division's accounting activities have generally centered around the approval of various plant account journal entries, providing interpretations of the Commission's accounting rules

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1/FCC can retroactively review the reasonableness of other interstate facilities, including switching, as was attempted in Docket 19129, phase II; however, as FCC's experience indicated, such a retroactive review is plagued by difficulties.

2/FCC's activities in setting depreciation rates and their implications in a more competitive environment are discussed in chapter 7.

and providing, as requested, support to the Hearing Division on accounting questions related to rate of return cases. The Division's responsibilities regarding the revisions to the Uniform System of Accounts which are discussed in chapter 5 have not been clear, resulting largely in an ad hoc, disjointed input.

The auditing capabilities the Division needs to review rate base and expense items virtually do not exist. The audit capabilities would determine whether

--the carrier is maintaining effective control over revenues, expenditures, assets, and liabilities;

--the carrier is properly accounting for its resources, liabilities, and operations;

--the carrier's financial reports contain accurate, reliable, and useful financial data; and

--the carrier is complying with the requirements of the Commission's regulatory rules and regulations.

According to the Acting Chief of the Division, anything which would resemble the audit function described above, other than some ongoing onsite work by the New York office, has not existed at the Commission. He attributed this to the lack of resources, the priority use of the audit staff for other tasks, and the general misunderstanding at the Commission of the importance of auditing and its relationship to regulatory functions. In this regard, the former Division Chief said that the Division's role has depended largely on how the Bureau Chief has perceived the Division function. He said that each of the past three Bureau Chiefs have handled things differently, each time with a direct impact on the Division's work approach.

Our review of the 23 ongoing or recently completed projects by the Division's Washington staff as of August 1980 showed that 7 were administrative, 10 dealt with accounting activities, 5 related to audit activities, and 1 was an internal FCC audit. Of the five audit projects none were specifically geared to review expense items of the domestic common carriers. One was to review the audit reports received from the field. One was essentially a desk or forms audit concerning whether financial material submitted by the carriers was correctly added and shown in the appropriate form and schedule. Two were for international activities and one related to the separations process. The large number of administrative projects, we were told by the Audits Branch Chief, was necessary to him because of his newness to the position.

The Division's New York office at the time of our review represented the Commission's ongoing "hands on" onsite audit activity. It consisted of nine auditors and two administrative persons. The audit activities of the office are determined

by the office chief and as directed by the Division's auditing branch. The office chief said that he determines what audit work to do by (1) reading the trade press, (2) reading FCC dockets and "Major Matters Before the Commission", and (3) reviewing carrier supplied data and noting any glaring changes. The office's work has largely been done in a vacuum. The Chief of the New York field office said that other divisions of the Bureau are not coming to him asking for assistance on projects which he or the New York office may have some knowledge or have done some work. For example, the New York office has not been asked for input regarding the Commission's revision of the Uniform System of Accounts or establishment of separate subsidiaries in the Computer II Decision. The official said the reports done by the New York office will go to other divisions within the Common Carrier Bureau if the Accounting and Audits Division Chief determines that the reports would be of interest and useful to the other divisions. Often, the official said, they complete a project, prepare a report, and then look around to see if anyone has an interest in their work.

The New York office audit work serves as FCC's ongoing audit of AT&T. The Chief of the New York field office noted that from their work at AT&T's New York Telephone Company they can generalize about the rest of AT&T. This is done by asking AT&T if conditions found by the audit at New York Telephone also exist at other operating companies. The official noted, however, that it would be far more preferable to have audit teams visit and audit similar activities at the other operating companies. The official noted that without additional personnel and travel moneys it was not possible for his group to go beyond the New York area.

Three of the nine auditors at the New York office at the time of our review were involved in reviewing the carrier's annual financial report. This review, a desk audit, is looking to see whether the information is (1) being reported properly, (2) reported in the right columns, (3) reported and presented in the proper forms, and (4) consistent. This desk audit, according to the Chief of the New York field office, is not intended to check whether the reported information is accurate or reliable, only that the financial forms are consistent. This official and another New York field office auditor noted in this regard that they did not see this as a useful exercise since the first thing they will do when looking at a particular activity of a company is to review the income statement, balance sheet, and other supporting records.

The above activities of FCC's Accounting and Audits Division do not represent a well designed program which can assure the regulator that a regulated company is performing in an efficient, economical manner. Based on the limited hands-on audits of domestic common carriers FCC has not systematically assessed carriers' rate base and expenses, and is in no position, for example, to detect

--wasteful use of property;

--procurement and accumulation of unneeded or excess quantities of property, materials, or supplies;

--inefficient or uneconomical use of equipment;

--duplication of effort by employees or between organizational units; and

--performance of work which serves little or no useful purpose.

It is not our intent to suggest that FCC should be in a position to audit all the activities of all the regulated carriers. The resource requirements would be overwhelming. Rather, we see three changes to FCC's existing audit approach. First, FCC must recognize that accounting and auditing are essential tools of the regulator which complement all other elements of its regulatory program. To use these tools the agency needs to have or develop knowledgeable and experienced people. This development can be enhanced by hands-on, onsite audit experience.

Second, FCC needs to set priorities for its audit work, thereby establishing coverage of a carrier's activities which can provide the Commission timely and adequate information on performance. For example, AT&T's maintenance expenses were singled out in FCC's Docket 19129 as an area which should be given increasing attention. However, according to the Audits Branch Chief and New York field office Chief they have done no audit work relating to the reasonableness of AT&T maintenance expenses.

Third, FCC's Accounting and Audits Division needs to have greater interaction and coordination with the State regulatory commissions. The Audits Branch and the New York field office do not solicit the views or opinions of the State regulators. They neither actively compare their own audit activities to those of the States, nor do they share or request copies of audit reports developed by the State commissions.

Problems with the regulatory program

In carrying out a rate of return/rate base regulatory program, FCC has made little progress since it clearly documented its own inadequacies in Docket 19129. Various officials, including former Common Carrier Bureau Chiefs, stated that a primary problem they faced was regulating a firm of the size and complexity of AT&T. They said, in this regard, that the difficulty in obtaining the knowledge and expertise necessary to regulate AT&T's rate base and expense items had resulted in relatively few resources being assigned to these activities.

During the time of our review the Chief of FCC's Common Carrier Bureau told us that he recognized that FCC's efforts had focused on establishing AT&T's rate of return and relatively little effort had been devoted to rate base and expense analysis outside of Docket 19129. He said that such an approach was taken because he believed FCC could not conduct a "textbook" rate of return/rate base regulatory program. As a result, he said, the Bureau has focused its attention on the one area which it can address--setting a rate of return--and spent little time on rate base and expense analysis--an area in which he believed FCC's ability to function effectively was questionable. He acknowledged that such an approach may create efficiency disincentives for the regulated firm. 1/ However, he believed that, overall, customers were better off under such a program than if regulatory control was eliminated. While he was not optimistic about FCC's ability to substantially improve its rate of return/rate base regulatory program in the future, he believed that one action which would be worthwhile was an expansion of FCC's audit capability.

Another former Bureau Chief also believed that it was impossible for FCC to develop a regulatory program which could effectively substitute for competition. He said, however, that in the absence of a workably competitive environment, FCC had no alternative but to attempt to formulate and carry out traditional rate of return and rate base responsibilities. In addition to strengthening FCC's audit capabilities, he also favored strengthening the Bureau's network analysis program and streamlining its rate of return setting process.

Obtaining and managing resources

Staff members in the Economics and Accounting and Audits Division, among others, believed that another source of FCC's difficulty in conducting a rate of return/rate base regulatory program stemmed from its inability to obtain, retain, and manage the resources needed to carry out its responsibilities. In this regard, officials believed that the Common Carrier Bureau did not have the trained staff needed to even begin to carry out an effective regulatory program.

One factor which was cited as contributing to FCC's staffing problems was turnover among Common Carrier Bureau officials. In this regard, during the 3 years before April 1981, the Bureau had four appointed or acting Bureau Chiefs, five Economics Division Chiefs, three Tariff Division Chiefs, three Chiefs in charge of domestic facilities, and three Chiefs in charge of program evaluation. Given the previously cited difficulty in obtaining a thorough understanding of the problems and nature of the industry,

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1/Efficiency disincentives which may result from regulation are discussed in appendix VI.

it is not surprising that turnover could greatly restrict FCC's ability to regulate effectively.

Officials said that management problems had also impacted FCC's regulatory efforts. One particular problem which was cited was the lack of effective coordination within the Bureau, particularly between the Economics and Accounting and Audits Division. The lack of interdivisional coordination and other FCC management problems were discussed and recommendations concerning overall FCC management effectiveness were made in our July 30, 1979, report "Organizing the Federal Communications Commission for Greater Management and Regulatory Effectiveness" (CED-79-107).

Obtaining and processing information

Problems in collecting, processing, and analyzing information were also cited by FCC officials as a factor affecting FCC's regulatory efforts. The Common Carrier Bureau Chief at the time of our review, as well as staff members in the Economics, Accounting and Audits, and Domestic Facilities Divisions pointed out information problems which had hampered their efforts. These included obtaining necessary information from AT&T and other carriers, organizing information collected into data bases, and developing reports and analyses which can be used in carrying out regulatory activities and deciding on policy matters.

The Common Carrier Bureau Chief told us that he recognized the need for a review of the Bureau's information activities and had initiated a study into this subject. A Program Evaluation Staff official told us in May 1981 that while the effort is not yet completed, some accomplishments have been achieved, including the elimination of certain carrier reports which are no longer needed.

Coordination with State public utility commissions

A further factor which has inhibited FCC's regulatory efforts is the lack of coordination with State public utility commissions. The responsibility for supervising rate base and expense items for AT&T and other carriers involved in both interstate and intrastate telecommunications is divided between FCC and State commissions, respectively. Consequently, both FCC and the States may frequently be involved in reviewing many of the same aspects of a carrier's activities. However, we were told by officials at both levels that little coordination has taken place, except for work involving Joint Boards and depreciation issues.

Both FCC and State commission officials we spoke with believed that increased coordination would be desirable and beneficial. They particularly believed that increased efforts to share information and to discuss problems and concerns at the staff level would be beneficial.

ALTERNATIVES TO AND ABANDONMENT OF THE TRADITIONAL REGULATORY PROCESS

A variety of proposals and suggestions have been made to modify, replace, or simply abandon the traditional rate of return/rate base regulatory process. These approaches range from relatively minor alterations in the methods used to determine rates of return to complete deregulation.

Most of the alternatives suggested appear to be based largely on considerations of economic theory. We are aware of little empirical evidence to support the changes proposed or to compare their effects to those which have resulted under existing applications of rate of return/rate base regulation. Indeed, such comparisons would be difficult to make with any degree of certainty.

Of the approaches which have been formulated, an approach for promoting competition where economic conditions no longer warrant the preservation of an exclusive monopoly franchise and for gradually relaxing rate of return/rate base regulation as markets become workably competitive appears to offer the greatest long-term benefit. 1/ However, other approaches--particularly those which attempt to affect the firm's incentives--also offer some potential for improving regulation in those markets which are not workably competitive.

Modifications of rate of return/rate base regulation

Perhaps the most noteworthy proposals to modify the existing rate of return/rate base regulatory system are those which involve the use of automatic rate adjustment clauses and incentive plans. In general, automatic adjustment clauses aim at facilitating the regulatory process while incentive plans focus on a firm's incentives to perform efficiently.

Automatic rate adjustment clauses are designed to expedite adjustments to changes in economic conditions. This may be done, for example, by indexing utility rates or certain utility costs, to a general economic indicator such as the Consumer Price Index, so that they would automatically go up or down by the same percentage as the percentage change in the indicator. 2/ The primary advantages of using such clauses are that (1) they may make it easier for utilities to deal with inflation and (2) regulatory agencies might be required to conduct fewer rate hearings and, thus, they could devote their time to other areas needing attention.

1/This is further discussed in chapter 2.

2/Automatic adjustment clauses may also allow utilities to simply pass along certain cost increases to customers.

Among their disadvantages are that they may reduce efficiency, they may not be tied to appropriate indicators, and they may be subject to manipulation.

Incentive plans attempt to provide firms with reasons to increase efficiency and, consequently, to overcome a primary weakness of rate of return/rate base regulation. Such plans are often predicated on the concept that a firm should be given the opportunity to earn above its cost of capital if it does so through efficiency improvements.

One of the methods aimed at improving efficiency is simply allowing a range in the firm's rate of return, the top of which would be above the firm's cost of capital. This would theoretically provide the firm with an incentive to reduce its costs, since by doing so it could increase its profits. 1/ While this approach appears to offer promise, a primary problem with it lies in establishing procedures to ensure that extra profits result from cost efficiencies rather than some other factors. 2/

FCC has taken some action to explore the possibility of using these or other modifications in its regulatory program for domestic common carriers. In 1974 Horace J. DePodwin Associates submitted a report to FCC under contract FCC-0071 in which it outlined an alternative to rate of return/rate base regulation. The proposed alternative used an incentive approach which would allow the regulated firm to increase its profits if its performance improved, in accordance with a performance index to be established by FCC. An FCC official involved with the contract said that nothing was ever done to attempt to implement the proposal since it was believed to be unworkable.

In 1976 FCC also held a 2-day conference in which a number of experts in regulatory theory were to discuss alternatives to and improvements in rate of return regulation for the common carrier industry. In his concluding remarks at the conference, the then Common Carrier Bureau Chief noted that while much information was presented on the theory and deficiencies of rate of return/rate base regulation, little was said about alternatives. Nevertheless, he believed the conference was "a good beginning" and, hopefully, would stimulate further research on the subject.

1/As discussed on page 37, FCC set forth such an approach in two of its rate of return proceedings for AT&T.

2/A more detailed discussion of modifications of rate of return/rate base regulation and examples of their use is contained in appendix IX.

Abandonment of rate of return regulation

Because of the problems which agencies such as FCC have experienced in formulating and implementing a rate of return/rate base regulatory program or some alternative to it, questions have been raised by some economists and regulatory theoreticians concerning whether regulation makes a difference or whether it is worth its costs. Some parties have argued that society would be better off if rate of return/rate base regulation were abandoned and some other form of government intervention were mandated, as necessary.

While it appears that rate of return/rate base regulation can and has made a difference in that agencies, including FCC, have, among other things, ordered rate reductions, disallowed items from firms' rate bases and limited rates of return, it has been argued that such actions do not necessarily prove that such regulation is effective. Rather, the argument continues, such actions may have been in error or may have led to service degradation or may have resulted from exaggerated requests made by the firm, which was aware that any full request would not be granted. Thus, it has been suggested, the ultimate result may have been close to that achieved without regulation.

Proponents of deregulation have also cited the costs to society which rate of return/rate base regulation may create. The regulatory process imposes administrative costs on the agency, the firm and other parties to regulatory proceedings--much of which is passed on to the ratepayer and taxpayer. However, it has been argued, even greater costs to society may result from the effects of rate of return/rate base regulation on the firm. For example, such regulation may distort the firm's pricing behavior and inhibit its desire and ability to innovate. It has been argued that the need to promote innovation is particularly acute in the telecommunications industry where the rate of technological advance is high.

Because of these costs, certain studies on the subject have concluded that rate of return regulation is likely to be more harmful than beneficial and, therefore, should be abandoned. Instead, it has been suggested that alternative forms of intervention such as opening the right to operate a public utility to competitive bidding at specified intervals (franchise bidding) or taxing excess profits could be used, if necessary.

While recognizing the validity of some of the problems raised in these arguments, other studies have argued against the overall conclusion that rate of return/rate base regulation should be abandoned under any circumstance. Among the counter-arguments which have been made to such broad deregulatory proposals are:

--They tend to be based on simplistic analyses.

--They tend to minimize the power and incentives of an unregulated monopolistic firm.

--They presume that the regulatory agency is inherently inept and no improvements in the regulatory process will occur.

--Alternatives such as franchise bidding and excess profits taxes are unlikely to function effectively.

A more middle ground approach for deregulating firms with monopoly power is one which links deregulation to the level of competition which exists in each market served by the firm. Under such an approach, legal barriers to entry are removed from markets in which cost factors or other economic concerns no longer justify the maintenance of a franchised monopoly. As competition develops in such markets, rate of return/rate base regulation is relaxed. To facilitate this process and make it function effectively, however, other forms of Government regulation or intervention may be required--particularly during the transition toward a fully competitive environment in all markets served by the firm. These include such things as:

--The establishment of structural requirements to reduce or eliminate the opportunities for firms to use their power in certain markets in an anticompetitive manner.

--The formulation of accounting requirements and cost allocation standards to ensure that costs are properly assigned between competitive and noncompetitive markets (as well as among services and products in markets which are not subject to effective competition).

--The requirement that all firms have nondiscriminatory access to those operations of dominant firms which competitors need to provide service.

In general, this is the approach which has been initiated by FCC and is being considered by the Congress for promoting competition and deregulating or modifying regulation of the telecommunications industry. While such an approach appears to offer substantial promise, a number of questions exist concerning FCC actions to ensure that the transition to a more competitive and less regulated environment is successfully completed. These questions are discussed in the remaining chapters of this report.

OUTLINE FOR IMPROVING FCC's RATE OF RETURN/RATE BASE REGULATORY PROGRAM

FCC's rate of return/rate base regulatory program, as described in the previous sections, has fallen short of both the standards set forth by economic theory and those which FCC established for itself in Docket 19129, phase II. While we recognize the inherent difficulty in conducting all of the tasks necessary to establish a "textbook" regulatory program as well as the uncertain outcome of any regulatory efforts, we believe,

nevertheless, that certain actions can improve the scope and intensity of FCC's regulatory efforts and better serve the public interest while a fully competitive marketplace is given the time and opportunity to evolve. These actions apply to both FCC's efforts to establish rates of return and to monitor rate base and expense items.

Rate of return

In establishing rates of return for carriers--as exemplified in its regulation of AT&T--FCC has relied in recent years on the use of an evidentiary hearing process. While this process represents the traditional approach used by regulatory commissions, its effectiveness has been questioned on the grounds that its contribution to the achievement of a reasoned determination by the Commission on a firm's fair rate of return is outweighed by the costs and delays which are attendant to it. The existing process has also been questioned on grounds of efficiency, in that largely duplicative proceedings must be conducted before both FCC and State commissions in which a carrier operates.

Although it appears unlikely that the existing process could be abandoned without jeopardizing carriers' rights to due process and equal protection of the law, we believe that FCC needs to institute a proceeding to explore opportunities for improving and facilitating present procedures as well as for making the need for full evidentiary hearings less frequent. The issues which need to be examined in this proceeding include, among others,

--opportunities for FCC to coordinate its rate of return determinations with those of State public utility commissions,

--the possible use of formats for presentations of cost of equity capital, and

--methods which could be used to adjust carriers rates of return between formal rate of return proceedings.

We also believe that FCC needs to initiate a project to explore the methods which it should use to address the issue of dominant carriers' efficiency and productivity. This should include an evaluation of using efficiency incentives in establishing carriers' rates of return. FCC has in the past allowed AT&T to earn above its cost of capital if such earnings were due to efficiency and productivity gains; however, no attempt was made to determine whether such earnings resulted from efficiency increases or from other sources.

While there appears to be considerable merit in incentive approaches such as this, we believe that FCC needs to develop measures of efficiency and productivity which it could use in applying such an approach in the future. For example, given the

problems which FCC has cited in AT&T's utilization of the interstate network (see pages 41 and 48), FCC may wish to explore the possibility of linking AT&T's rate of return to its efficiency in designing and using interstate facilities.

We recognize that developing efficiency and productivity measures is a complex undertaking, particularly for a firm the size of AT&T. However, given the importance of ensuring the achievement and maintenance of high performance levels in U.S. industry and the possibility of rate of return/rate base regulation weakening efficiency and productivity incentives, we believe the Commission needs to direct the Common Carrier Bureau to initiate a project to work toward developing efficiency and productivity measures. Based on this groundwork the Commission would then be in a position to determine how such measures could best be used in regulating dominant carriers.

We also believe that prompt Commission action is needed to resolve the issues which it raised in its 1979 notice of inquiry on AT&T's apparent 1978 excess earnings. Such action should resolve not only the factual question of whether AT&T earned in excess of its authorized rate of return, but also set forth a policy which the Commission can follow in any similar instances in the future. Such action, we believe, will help dispel questions concerning the Commission's credibility as a regulator.

Rate base and expenses

We believe that several actions are also needed to improve FCC's review of the rate base and expense items of dominant carriers. These include (1) upgrading the Common Carrier Bureau's information collection and analysis capabilities, (2) establishing an expanded audit capability, (3) improving FCC coordination with State public utility commissions, and (4) modifying FCC's facilities authorization authority and procedures.

FCC's Common Carrier Bureau has already taken an important first step in improving its regulatory program by undertaking a study of the Bureau's information needs and requirements. Once this study has been completed the Bureau will be in a better position to develop improved data bases which it can use to monitor dominant carriers' rate base and expense items on a continuing basis. To ensure that this function is carried out, we believe FCC needs to reestablish a group within the Economics Division which has the resources necessary to carry out primary responsibilities assigned to the Cost Analysis Branch, including

--developing methods for testing the reasonableness of carrier investment costs and expenses,

--identifying and investigating deviations by carriers from cost standards and recommending corrective action, and

--monitoring rate base components and recommending action in those cases where amounts appear unreasonable or inappropriate.

FCC's audit capabilities within its Common Carrier Bureau's Accounting and Audits Division must also be tailored to meet its needs for timely and adequate information on carriers' performance. This can be achieved by upgrading its existing audit capabilities through a more active, participatory audit program--one whose work has been prioritized and complements other elements of the regulatory process, including those of the Economics Division, described above, and has been communicated and coordinated with others in the Commission and State regulatory agencies.

Similarly, FCC needs to cooordinate other elements of its regulatory program with those of State public utility commissions. At present, little coordination exists, particularly at the staff level. To improve the FCC-State relationship, FCC needs to establish a program within the Common Carrier Bureau under the direction of a top level official aimed at accomplishing this task. This person should work with other Bureau officials, representatives of State commissions, and the National Association of Regulatory Utility Commissioners to determine the methods which can best be used to improve the exchange of information and coordination of activities between FCC and the States.

To improve FCC's ability to carry out its responsibilities to authorize carrier facility construction programs, its authority under section 214 of the Communications Act needs to be broadened. During our review FCC has taken action to improve its review of facilities constructed by carriers by increasing the staff assigned to its network analysis function and by initiating action to formulate its future program for reviewing the construction and use of facilities by carriers. We view these as positive steps.

To ensure that FCC has the needed flexibility and authority to carry out these responsibilities, however, FCC's present authority under section 214 needs to be amended. In the past, FCC's authority under section 214 has been applied to only transmission lines--which constitute a small portion of the interstate communications network. While FCC officials believe its authority might be reinterpreted without legislative change, such action could provoke legal challenges. Congressional action formally extending FCC's facilities authorization authority to any new facilities under its jurisdiction, including switching, would provide FCC the regulatory certainty and flexibility needed to administer its facility authorization responsibilities. Further, since FCC's efforts in this area have been hampered because facilities submitted to it for authorization have been planned years in advance, FCC needs to have specific authority to require long-term facilities plans from carriers and to establish the necessary safeguards to ensure that such plans are followed.

CONCLUSIONS

In carrying out its regulatory responsibilities under title II of the Communications Act of 1934, FCC has used a system of rate of return/rate base regulation to govern the prices charged by carriers. In keeping with the precepts of this system, FCC is responsible for establishing and monitoring rates of return, reviewing the reasonableness of rate base and expense items, and approving service rates of carriers which are subject to this form of regulatory control. In addition, to ensure that regulatory constraints do not lead to undesirable consequences such as service degradation, FCC must also supervise such carriers' performance and conduct.

As is evidenced by its application of rate of return/rate base regulation to AT&T, FCC's experience in formulating and implementing a regulatory program to meet the criteria established by economic theory has been far from successful. FCC has made little progress in carrying out the agenda which it established for itself in Docket 19129, phase II--both in terms of (1) addressing specific problem areas cited in the docket and (2) generally upgrading its continuing surveillance regulatory program.

Given the complexity and magnitude of the tasks which FCC faces in regulating the domestic common carrier telecommunications industry, we do not believe that FCC will ever achieve a standard of performance through regulation which will simulate a competitive outcome. Such an effort, we believe, would involve resources beyond any reasonable standard, and even if such resources were available, the additional cost which this imposes on society would still have to be balanced with the benefit produced.

As discussed in chapter 2, we believe that FCC's move toward competition and concomitant relaxation of rate of return/rate base regulation in domestic telecommunications represents an alternative which may produce long term benefits to society. However, as noted in that chapter the development of workable competition in all telecommunications markets has not yet occurred. Consequently, we believe that it will be necessary for FCC to continue its application of rate of return/rate base regulation for those carriers which it considers to be dominant.

We have found little empirical evidence which can be used in determining what type or intensity of regulation will produce the optimum results in these markets. We believe, however, the regulatory and legislative initiatives we have outlined on pages 58 through 61 represent opportunities for strengthening the regulatory emphasis and precision that we found to be lacking.

RECOMMENDATIONS TO THE CHAIRMAN, FCC

We recommend that the Commission:

--Initiate a proceeding to explore changes needed to facilitate or otherwise improve FCC's rate of return setting process for dominant carriers including: (1) opportunities for coordinating its rate of return determinations with those of State public utility commissions, (2) the possible use of formats for presentations of cost of equity capital, and (3) methods which could be used to adjust carriers' rates of return between formal rate of return proceedings.

--Initiate a project within the Common Carrier Bureau to examine dominant carriers' efficiency and productivity. This inquiry should explore possibilities for linking carriers' rates of return to efficiency and productivity gains.

--Resolve the issues relating to AT&T's 1978 apparent excess earnings by completing the October 1979 Notice of Inquiry.

--Reestablish within the Common Carrier Bureau's Economics Division a group with clear responsibility and adequate resources to: (1) develop methods for testing the reasonableness of carrier investment costs and expenses, (2) identify and investigate deviations by carriers from cost standards and recommending corrective action, and (3) monitor rate base components and recommend action in those cases where amounts appear unreasonable or inappropriate. This group's activities should be fully coordinated with those of other groups within the Bureau that have related functions.

--Increase the scope of the Common Carrier Bureau's audit program to enable it to review, appraise, and report on carriers' operations and activities to support the Commission's rate of return/rate base regulatory responsibilities.

--Establish a program within the Common Carrier Bureau to improve overall coordination between the Bureau's regulatory activities, including its rate base and expense analysis functions and those of State public utility commissions.

RECOMMENDATION TO THE CONGRESS

We recommend that the Congress clarify FCC's facility authorization authority by amending section 214 of the Communications Act of 1934 to explicitly authorize FCC to require carriers to:

--Submit to it for approval applications to construct any new facilities or extensions thereof which are subject to its regulatory jurisdiction.

--File with it long-term facilities construction plans in lieu of or in addition to such applications and to establish such conditions and reporting requirements as are necessary to assure that such plans are followed.

CHAPTER 4

COSTING PRINCIPLES AND METHODOLOGIES TO PREVENT CROSS-SUBSIDY--FCC'S FAR FROM SUCCESSFUL 20-YEAR STRUGGLE

The introduction of competition has brought with it the need to allocate costs among various telecommunications services to prevent the cross-subsidy of competitive services by monopoly services. FCC has struggled with this issue for over 20 years--the first 15 in determining appropriate costing principles, the last 5 in attempting to implement these principles. FCC was unsuccessful in implementing the costing methodology it adopted in 1976 and in December 1980 FCC adopted an Interim Cost Manual which used a sharply different methodology than the one adopted earlier. This manual is intended to provide a way to allocate costs until a more complete approach can be developed; however, FCC's long-run approach is still unclear.

The potential for cross-subsidy remains strong and this issue must be addressed more comprehensively than it has been to date. We are recommending certain improvements in the Interim Cost Manual as a near term approach and look forward to a long-run solution based on the development of a new Uniform System of Accounts and certain noncost approaches to preventing cross-subsidy. We are also recommending changes in the Communications Act to facilitate FCC's obtaining cost data from dominant carriers.

THE IMPORTANCE OF COSTING METHODOLOGIES IN A COMPETITIVE ENVIRONMENT

Before competition was introduced, regulation was concerned with the overall costs of the monopoly firm. Even though the carrier provided multiple telecommunications services and equipment, because it had no competitors the prices charged for these services and equipment were not a major issue.

With the introduction of competition the focus of regulatory concern expanded to the appropriateness of the prices of individual services and equipment. Where a firm operates in two markets--one monopolized and one populated by new competitive entrants--it has an incentive to cross-subsidize the competitive markets by undercharging for services in the competitive markets and overcharging for services in the captive monopoly markets. The effect of such pricing behavior can nullify or restrain the development of competitive markets.

The potential for cross-subsidy is compounded in telecommunications by the nature of the telecommunications plant. The dominant firm provides all telecommunications services via a single, integrated network involving extensive use of common facilities, personnel, management, and marketing resources. If use and value of these common resources are misallocated between

monopoly services and services subject to competition, and among classes of competitive services, then cross-subsidy can exist. The misallocation may be accidental or intentional. For example, given that the highly monopolized MTS/WATS services constitute the overwhelming proportion of the dominant firm's revenues and costs, errors which overallocate joint and common costs to these services can be expected to have little impact on these services or on the firm's overall revenues. These same errors, however, will underallocate costs to competitive services thereby reducing their price with corresponding negative implications for competitors.

In addition to inadvertently misallocating joint and common costs, a regulated firm facing competitive entry in particular markets may have an incentive to classify as much cost as possible in categories which are not directly attributable to a specific service and also design its plant to be joint cost in nature. As a result, the directly attributable costs of producing competitive services appear "low" and the firm can then justify to the regulator low prices based on these apparently low costs for services facing competitive entry.

With the introduction of competition, developing costing principles and methodologies to guide in determining the appropriate rate level for monopoly and competitive services has become a critical issue and has occupied FCC's attention for over 20 years. This attention has focused in two areas--(1) establishing the underlying costing principles and (2) implementing the principles in determining prices for monopoly and competitive services.

ESTABLISHING COSTING PRINCIPLES--
THE ROAD TO FULLY DISTRIBUTED
COST METHOD 7

Establishing costing principles came to a head in October 1976 when FCC issued its decision in Docket 18128 enJorsing Fully Distributed Cost (FDC) Method 7 as the appropriate method for allocating costs among services. This decision had its roots in the origin of competition in long distance, interstate telecommunications. In its 1959 Above 890 Decision FCC permitted the construction of interstate, microwave communications networks by private (noncommon carrier) businesses. In response to this decision, AT&T filed the TELPAK tariff in February 1961, which provided for drastically reduced private line rates for bulk lease of channels. TELPAK directly challenged the economic viability and potential growth of these private microwave systems.

The TELPAK tariff was reviewed in a series of proceedings which began in 1961. As these proceedings evolved, they produced evidence which suggested that cross-subsidy was a potential

problem. 1/ As a result, the investigation of the TELPAK tariff broadened into a proceeding to establish basic costing principles. Two basic costing approaches became the focus of Docket 18128--Long Run Incremental Cost and Fully Distributed Cost.

What are Long Run Incremental Cost and Fully Distributed Cost?

Long Run Incremental Cost and FDC differed in two major respects--how common costs were distributed and how cross-subsidy was determined.

In the area of common costs under the long run incremental costing approach, AT&T proposed to FCC that it would forecast the incremental investment and expenses directly attributable to the particular competitive service. The service would be priced to cover these incremental costs and make some contribution to the common costs associated with providing this and other services. The magnitude of this contribution to common costs would depend on the prevalent competitive conditions and how high a price AT&T thought it could charge. The portion of common costs not recovered by the revenues from the competitive services were to be recovered by the monopoly services so that in the end AT&T would meet its total revenue requirement (i.e., it would collect revenues from all its services to cover its total costs). This was known as the "basic service" philosophy. The net result was AT&T was afforded considerable latitude in the assignment of common costs to various services, and through common costs' impact on total costs considerable latitude in setting prices for services.

The FDC approach sought to reduce this latitude. 2/ After attributing to each service its direct costs, the FDC methodologies, unlike the incremental cost approach, sought to distribute

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1/As part of its investigation of TELPAK, FCC ordered a study to ascertain AT&T's interstate investment, revenues, expenses, and net earnings for seven categories of service. The resulting "Seven Way Cost Study" submitted in September 1965 showed returns for MTS and WATS were above the overall systemwide rate of return and returns for competitive services significantly below the overall systemwide rate of return.

2/Seven FDC methods (FDC-1 to FDC-7) were initially proposed by AT&T in an attempt to demonstrate that fully distributed cost allocation methodologies are inherently arbitrary and without rigorous economic justification. Conversely, AT&T argued that its incremental methodology was more appropriate because it was similar to the economist's view that prices should be based on marginal (or incremental) costs. In the debate over costing principles attention was focused on FDC-1 and FDC-7.

on the basis of economic allocation methods the remaining joint and common costs among all the various services. In the case of FDC-1 this allocation was to be made on the basis of the "relative use" each service made of the cost element in question. Statistical and/or judgmental determinations (i.e., special studies) measured relative use. Under FDC-7 the allocation of joint and common costs was not made on the basis of relative use but rather on the principle of "historical cost responsibility." Measuring historical cost responsibility involved determining the extent to which increases in total costs resulted from provision of a particular service.

To address the issue of cross-subsidy the incremental approach was supposed to use a "burden test." This test was used to determine whether a competitive service's additions to total revenue exceeded the combination of (1) the costs saved in the service's absence and (2) the revenues flowing to this service from other services due to crosselasticity (i.e., their substitutability). If it did, it was presumed there was no cross-subsidy; however, this test was purely hypothetical.

For both FDC approaches, once all costs and revenues had been allocated to all of the services, a rate of return was calculated for each service. Cross-subsidy was assumed to have occurred whenever some services earned substantially less than the average overall rate of return.

The Docket 18128 decision

The decision to select FDC-7 as the appropriate costing methodology was a compromise. It arose because AT&T supported the incremental approach while the Common Carrier Bureau staff supported the fully distributed approach. The Common Carrier Bureau staff opposed the incremental approach on two grounds. First, they felt it was not true to the theoretical constructs of marginal costing because it only applied to AT&T's competitive services. Second, because of the large amount of judgment involved in distributing common costs and determining whether a service had been a "burden," they felt FCC would not be able to hold AT&T accountable for the prices it set for its services under such an approach. The Bureau recommended FDC-1 as the most implementable and correct method for preventing cross-subsidy.

At the same time, AT&T stressed the apparent theoretical correctness of its incremental costing properties. The Commission was at an impasse. It could not approve the incremental approach because of the staff's objections, yet it was apparently attracted by the theoretical arguments in favor of an incremental costing approach.

FDC-7 appeared to be the only method in the hearing record which could bridge this disagreement. It distributed costs fully, yet at the same time the assignment of common costs on the basis

of their historic causation of costs appeared to capture the forward looking aspects of the incremental methodology. This was particularly the case after FCC ordered certain "infirmities" in FDC-7 corrected. These included (1) the assignment of facilities to services under the proposed FDC-7 was too fluid, and without a fixed assignment AT&T could construct a variety of facility assignments in response to competition (and thus generate the costs needed to justify rates necessary to meet competition); (2) the proposed FDC-7 did not fully reflect the expected use of facilities in making the initial assignment of facilities to particular services; and (3) FDC-7 could not truly be based on historic causation unless it involved the projection of intended uses of facilities and fixed assignments of plant by service. 1/

To correct the problem of fluid facility assignment, FCC mandated that a fixed facilities "datum" be established as of a particular point in time. The datum would be developed by recording AT&T's assignments of existing and new facilities by service. Such shares of total facilities (rate base) would be used in determining service costs and rates. To establish an initial datum the Commission "suggested" AT&T go back to the Seven Way Cost Study and work forward matching facility cost assignments with the uses (services) for which facilities were constructed.

Forecasts were to be used to assign newly completed common facilities. These facilities were to be assigned on the basis of the projected use of the facility by each service. However, once these facilities were assigned based on either historical causation or forecasts they were to remain fixed. AT&T was placed on notice that although the datum would partially contain prospective cost causation estimates, variance from such projections would ultimately have to be reconciled.

To facilitate such a reconciliation, FDC-1 was selected for use as a check on the modified FDC-7 results. The FDC-1 relative use assignment of costs would be compared with FDC-7's historical causation assignment on a periodic basis for evidence of "gross imbalances."

On the issue of cross-subsidization, FCC stated that

> "* * * we find that the existence of levels of return that are unjustly and unreasonably high or too low, indicate a return level relationship which embodies cross-subsidization. In absence

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1/In the FDC methodologies the allocation of expenses was derived from the allocation of facility costs to the particular services. Consequently, the allocation of facility costs was an area of critical concern.

of proper justification we hold this cross-subsidization unlawful within the meaning of Section 201(b); it must be eliminated." [1/]

FCC directed AT&T to file revised rates and cost support material for its interstate services so that each service earned a return equal to the company's prescribed overall rate of return.

To correct the infirmities and implement Docket 18128, FCC ordered its staff and AT&T to work together to revise FDC-1 and FDC-7 and develop appropriate forecasting techniques. 2/

THE IMPLEMENTATION OF FDC-7-- A TROUBLED AND ULTIMATELY FUTILE EXERCISE

Following the decision in Docket 18128, FCC spent over 4 years trying to successfully implement the FDC-7 costing methodology. In December 1980, FCC abandoned this effort in favor of a costing approach which did not rely on cost causation and allocated costs to significantly fewer categories. Numerous factors contributed to FDC-7's demise; however, the major elements contributing to its unsuccessful implementation were

--it contained two intrinsic flaws and

--FCC did not follow through with the implementation of FDC-7 in areas which would have enhanced its opportunity for success.

Key events during FDC-7 implementation

In response to the Commission's direction in the Docket 18128 decision, the Common Carrier Bureau in October 1976 formed a Cost Analysis Task Force. The task force and AT&T personnel met in working sessions over the next several months. In January 1977 the task force issued an interim report and a Cost Allocation Manual (known as the January Manual). This manual was used for AT&T's June 1977 submission required by Docket 18128. The consultative process continued and in August 1977 the task force issued a final report along with a refined manual (the August Manual). This manual was to be used in later tariff filings.

1/FCC was vague on the issue of what services were actually subsidizing what other services. Rather, it found return levels too low on some services--indicative of cross-subsidization.

2/Certain aspects of the decision were supposed to apply to Western Union. Discussions with FCC staff indicate little was done in this regard and, consequently, our discussion focuses on FCC's activities regarding AT&T.

Use of the term manual is something of a misnomer. The manual did not present a step-by-step procedure for allocating costs. Rather, it can best be characterized as guidelines regarding how certain segments of the cost allocation process should be handled. These guidelines vary in specificity, some being very detailed, others stating that AT&T can use a variety of approaches so long as they fully document their procedures.

The final task force report noted major areas of disagreement between FCC and AT&T over the implementation of Docket 18128. The Commission "took note of" but never officially approved the manuals.

Following the development of the cost manual AT&T filed new cost studies in Docket 20814 using the manual. This Docket was established in 1976 to look at the lawfulness of AT&T's Multischedule Private Line Tariffs. As a result, in March 1978 FCC changed the direction of this proceeding to examine the consistency of AT&T's costing approach with the principles of the Docket 18128 decision.

In March 1979, an FCC administrative law judge issued his initial decision on Docket 20814. In it he made a series of negative findings on AT&T's implementation of Docket 18128 and based on these findings he rejected the tariff. He also developed and recommended for Commission approval a new cost allocation manual and recommended that AT&T file a new cost study based on the new manual. He saw the recommended manual as giving FCC the control necessary to accurately audit AT&T's costing methods.

In the final decision in Docket 20814 the Commission did not address all of the initial decision's findings. Rather, it focused on the finding that AT&T used the "basic service" approach of residual costing for certain parts of its plant--a clear violation of Docket 18128--using it to reject the tariff. The Commission also concluded that AT&T's cost allocation methodology was inconsistent with Docket 18128. Instead of using the initial decision's manual FCC decided to begin a new proceeding to prescribe a cost allocation manual. It stated:

> "The record in this proceeding leaves little doubt that a Commission-prescribed FDC manual is needed if we are to have reliable, accurate information as to AT&T's cost of service."

FDC-7 contained two intrinsic flaws

The selection of FDC-7 represented a compromise. With this compromise came two inherent flaws which FCC could ultimately not overcome. First, FDC-7 relied on forecasting to allocate plant costs among service categories. Second, FDC-7 produced total costs for AT&T's interstate services which could not be reconciled with the total costs AT&T was allowed to recover as a regulated firm.

FCC has experienced several problems in implementing its desire to use forecasting to allocate facility costs among service categories. Initially, in the meetings with the Cost Analysis Task Force AT&T stated that it did not engage in planning and procuring facilities on a service-by-service basis. Rather, reflecting the fungible nature of its plant, AT&T stated that it forecasted the demand for its aggregate plant and then built the plant to provide the mix of services eventually demanded by users. This meant that using forecasts to allocate costs among services was an artificial process and not related to how AT&T decided to acquire facilities.

Forecasting requires significant management judgment. This is particularly the case with AT&T where many of its services are close substitutes for one another. For example, forecasting rapid growth in one service may mean forecasting slower growth for a complimentary service. Balancing these forecasts requires judgment and makes the forecasting process more difficult. The substitutability of services also reinforces the tendency to forecast only aggregate demand and to build fungible plant.

In an environment where forecasts are not used by the carrier in its procurement decisionmaking and where significant management judgment is involved, there may be an incentive to underallocate plant to competitive services and overallocate plant to monopoly services--in other words, to cross-subsidize. FCC officials and industry observers feel this has been the net result of using forecasting to implement FDC-7. As evidence of this, they cite the inaccuracies of AT&T's forecasts and the considerable difficulty FCC has experienced in getting AT&T to satisfactorily specify the effects of assumptions made whenever managerial judgment is used in the forecasting process. This has led some FCC officials to favor removing forecasting from the costing process.

The Commission does have, however, the ability to exercise control over the quality of forecasting by holding the carrier accountable for the accuracy of its forecasts. We believe two methods are available. One is the reconciliation of the relative use FDC-1 with the FDC-7 results as was contemplated in Docket 18128. This has never been done, despite findings in Docket 20814 that discrepancies in plant allocation and actual plant use did exist. The other method involves the reconciliation of forecasts from the costing process with forecasts required as part of the section 214 facilities authorization process. As described in chapter 3, carriers must get FCC approval before constructing transmission facilities. As part of their application, FCC requires facility forecasts. Both the Cost Allocation Task Force and Docket 20814 recognized that the facility authorization process could be used as a "check" on the costing process but no such reconciliation was ever attempted.

When asked why neither of the two methods has been used, the Chief of the Policy and Program Planning Division and an economist and an attorney in the same division noted that even

if a periodic reconciliation occurred, the inherent difficulties in forecasting would mean that any deviations between forecasted and actual use might be explainable by exogenous factors, raising a legitimate question of to what extent the carrier should be held accountable. In such an environment, the Commission would be reluctant to take any action. An administrative law judge and an attorney in the Policy and Program Planning Division saw it as merely a lack of will on the Commission's part. Without a mechanism to induce accountability FCC is likely to continue to experience difficulties with forecasting since the incentive to manipulate forecasts will not be reduced.

The second major flaw has to do with a process known as "trial balancing." The essence of AT&T's implementation of the FDC-7 costing methodology is the building up of costs to be allocated to services through a rather complex process. 1/ This process, however, is not the same process which is used to determine the aggregate costs AT&T may recover from its total interstate operations. This latter process is known as separations procedures. 2/

As the costing methodology was being implemented, it was found that the total costs derived through the FDC-7 process were significantly less than the total costs derived through separations. This led AT&T to use a "trial balancing" process to adjust costs created through FDC-7 with the total costs assigned to interstate service through separations. The amount of the shortfall was about $2 billion. How this amount was distributed among the services could significantly affect the costs assigned to these services; therefore, another opportunity for cross-subsidy was created. AT&T argued that "most of the difference" was due to differences in the two methodologies. Competing carriers, along with FCC, expressed the view that the differences were due to the complex costing process and errors in forecasting.

1/Briefly, this process involves taking the forecasts of demand for service and generating the quantity of plant necessary to fill that demand through the use of "translators" or other factors. The cost of the needed facilities is the result of multiplying the projected plant quantities by the unit costs of the various facilities. These unit costs, however, are developed from "special studies" of the cost and characteristics of plant currently in use. Once the cost of plant has been allocated, the allocation of operating expenses is made based primarily on the allocation of plant.

2/Because many of the costs of providing service are common costs, some procedure had to be developed to allocate these costs for regulatory purposes to either interstate (FCC regulated) or intrastate (State public utility commission regulated) jurisdictions. AT&T is allowed to recover its total interstate costs through its various interstate services. (See p. 77.)

The Chief of the Common Carrier Bureau at the time of the Docket 18128 decision told us that he recognized that FDC-7 developed costs, and separations costs were probably not going to be the same. He stated that it was his intention to revise separations procedures to attempt to resolve this problem; however, this was never done. Consequently, the problem of trial balancing remained along with the attendant opportunities to manipulate the outcome of the costing process.

FCC did not follow through with the implementation of FDC-7

The pattern of problem recognition and inaction was not confined to the forecasting and trial balancing area. FCC did not follow through in the development of the Uniform System of Accounts (USOA)--a key area which would have enhanced FDC-7's opportunity for success. FCC also did not exert effective control over the implementation process of FDC-7.

As noted above, a major aspect of AT&T's implementation of the FDC-7 methodology involved the use of special studies. FCC staff experienced considerable difficulty with these studies, finding them extremely complex, difficult to understand and verify, and thus, in their view, beyond their ability to meaningfully review. This view was reinforced in the initial decision in Docket 20814 where the administrative law judge was highly critical of AT&T's cost studies to the point that he felt that their deficiencies alone were a basis for rejecting the tariffs.

The need for these special studies flows, in large part, from the inadequacies in the current USOA. The current system of accounts collects data on an aggregate, companywide basis and as such cannot provide the detail needed for service-by-service costing. The Commission recognized these difficulties and in June 1978 began a proceeding to revise the USOA. The Common Carrier Bureau Chief, at the time of the Docket 18128 decision, told us that the cost manual was viewed as an interim approach and once the revised USOA had been developed which provided the necessary detailed costing information, the manual could have been abandoned.

As will be discussed in detail in chapter 5, FCC over the last 3 years has made virtually no progress in revising the USOA. We recognize, however, that revision of the USOA will not obviate the need for all special studies. Further, had FCC made satisfactory progress in revising the USOA it is conjectural whether the project would be complete and implemented as of this date. Nevertheless, this situation has meant that the need for extensive special studies and the attendant problems of review and verification remain and will continue for the foreseeable future.

FCC also did not exert effective control over the FDC-7 implementation process. The Cost Analysis Task Force, as noted earlier, was formed after the Docket 18128 decision. The task

force was charged with

> "* * * developing, on an expedited basis, rules and procedures which will ensure that telephone industry costs are properly allocated and accounted for on a service-by-service basis."

This was to be accomplished within 3 months. The expectation that the working sessions would develop implementation procedures was reflected in the Docket 18128 decision itself, which as the Chief of the Policy and Program Planning Division stated was long on generalities and short on details regarding how FDC-7 would be implemented.

In contrast to these expectations, when the task force reports and manuals were submitted to the Commission, the Commission while accepting the reports took note of but never officially approved the manuals. The Common Carrier Bureau Chief at the time of the manuals' development told us he advised the Commission not to endorse the manuals. He said that the development of the manual by the task force was in direct conflict with his view of the initial purpose of the task force, which was to simply explain the principles of Docket 18128 to AT&T and allow AT&T to develop implementing procedures. He did not want the task force agreeing with AT&T over implementation procedures because the Bureau simply did not know enough about the special studies, data bases, or forecasting techniques AT&T might use to generate cost of service data to know to what they were agreeing. He favored having AT&T file tariffs implementing the Docket 18128 principles, and through the review and analysis of these tariffs learn what cost data AT&T was using and how the 18128 principles could be implemented.

The apparent conflict between the stated purpose of the task force and the responsible official's expectations contributed to FCC's inability to satisfactorily implement FDC-7. If the purpose of the task force was as publicly stated, then given FCC's lack of knowledge, a deadline of 3 months was, in our view, totally unrealistic. Further, the task force should have been given authority to compel AT&T to reveal the data bases which could have been used to develop an allocation process. Such authority falls within FCC's powers under section 218 of the Communications Act; however, the task force was given no control over the implementation process. 1/ If, as the Bureau Chief suggested, a more passive posture was desired, then setting up the task force with such a specific deadline was clearly not appropriate. The net result we believe was a manual over which FCC did not exert adequate control and which FCC did not fully understand or have confidence in, but

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1/Section 218 authorizes FCC to "inquire into the management of the business of all carriers subject to this Act" and to "obtain from such carriers * * * full and complete information necessary to enable the Commission to perform its duties * * *."

which having been developed in the working sessions had a certain undeniable legitimacy.

FCC ADOPTS AN INTERIM COST MANUAL WHICH OFFERS LITTLE IMPROVEMENT OVER FDC-7

After a 4-year struggle with implementing FDC-7, FCC in December 1980 (Docket 79-245) discarded FDC-7 and adopted an Interim Cost Manual which differed sharply in approach from FDC-7. This manual sought to avoid the inherent flaws of FDC-7 and to produce a cost methodology which was more understandable and auditable and which did not create incentives for manipulation by a dominant carrier. The manual was intended only to serve as a stopgap until a more acceptable long-range solution could be developed. Part of this long-range solution apparently includes other "noncost" approaches, such as resale and sharing, to prevent cross-subsidy.

FCC has through the interim manual eliminated the major flaws of FDC-7, but we question whether FCC has produced a more understandable, auditable method for allocating costs. Further, we believe the interim manual does not reduce the incentive to manipulate the costing process. The manual is also, we believe, an ad hoc response to the order of the U.S. Court of Appeals for the District of Columbia Circuit to develop an acceptable WATS tariff. Thus, we see the interim cost manual as just that--an interim solution--which cannot serve as a long-term approach.

The Interim Cost Manual differs from FDC-7 in two major respects--the manner in which costs are allocated among services, and the number of service categories to which costs are allocated. Whereas FDC-7 attempted to build up costs using forecasts and a complex costing process, the Interim Manual incorporates no forecasting. Rather, it takes facility costs derived from separations procedures and allocates them based on relative use among the service categories. Some of this allocation takes place within the separations procedures--separations divides costs between message services (MTS and WATS) and an aggregate of private line services--the remaining allocation is done within the Interim Manual procedures. Expenses are divided among the service categories by the use of the techniques in the August Manual.

While FDC-7 divided costs among 16 service categories the Interim Manual has only four categories--MTS, WATS, an aggregate category for all private line services, and Exchange Network Facilities for Interstate Access (ENFIA). 1/

The Interim Manual has apparently mitigated the major flaws of FDC-7. By eliminating forecasting, FCC has eliminated one major trouble spot. By using separations procedures as a starting point and dividing total costs from the "top down"

1/ENFIA is discussed in chapter 8.

on the basis of relative use, FCC has also mitigated the problem of trial balancing. FCC also argues that separations based numbers are more auditable and understandable than FDC-7. By basing costing on existing separations procedures, FCC officials feel they have reduced the incentive and opportunities for manipulating the costing process. This has resulted, FCC believes, in separations procedures being more effective than FDC-7 in preventing cross-subsidy between MTS and private line services.

Regarding the contraction of service categories, FCC has argued that increases in competition in private line services have mitigated the potential for intra-private line cross-subsidy, thus removing the need for the individual private line service categories which made up the bulk of the earlier 16 categories. FCC has also noted that it is taking action in noncost approaches of resale and sharing (see p. 82), and the restructuring of private line services which will further reduce the potential for cross-subsidy. FCC has said, however, that it still expects AT&T to justify its private line tariffs using fully distributed costs but it has left the allocation techniques to AT&T.

The Interim Manual is not an appropriate cost of service methodology

Major portions of telephone plant are used jointly or interchangeably to provide interstate and intrastate service. Separations procedures were started around 1910 to allocate plant costs as well as expenses, taxes, and reserves for regulatory purposes between intrastate and interstate jurisdictions. The basis on which separations are made is the relative use of telephone plant in each of the operations. As noted below, the usage measure may be expanded by some multiple when applied to particular types of plant. This allocation occurs in a two step process. The first step is to divide the cumulative plant costs recorded in the USOA into the special plant categories used in separations. For example, the USOA has one account for all Central Office Equipment. The equipment in this account is divided into eight categories for separations purposes. The second step is to apportion the cost of the plant in each category among the operations by the application of various usage factors or by direct assignment. Usage is determined through various special studies. General guidelines for separations procedures are in the Separations Manual, which is contained in Part 67 of FCC's rules.

Separations procedures were designed to allocate costs between the interstate and intrastate jurisdictions. They were not designed to allocate costs among services. Consequently, separations uses techniques which may not produce an appropriate allocation of costs among services. For example:

--Separations uses residual costing techniques, which FCC found inappropriate in Dockets 18128 and 20814.

--Separations uses broad averaging of costs which ignores the different cost characteristics of various categories of plant.

--Separations uses a subscriber plant factor which multiplies the usage measure by about three times to allocate a greater portion of certain types of exchange plant to the interstate jurisdiction than application of the basic usage measure would accomplish.

In particular, because of the residual techniques and because the subscriber plant factor is applied only to message service usage and not to private line service usage, it appears that separations underallocates costs to the private line category.

Both this result and the inappropriateness of using the separations procedures for cost of service allocations is recognized in the Separations Manual and has been readily acknowledged by FCC officials and by the Commission in its Report and Order implementing the Interim Manual. The Commission, however, defends the use of separations on the following grounds.

--An advantage of using separations is that it is more understandable, auditable, and may reduce the incentive to manipulate the costing process when compared with FDC-7.

--While costs may be underallocated to private line services using separations, more costs are allocated using this method than were allocated under FDC-7.

--Separations will be more effective in preventing MTS cross-subsidy of private line services.

--An FCC-State joint board proceeding to revise separations was begun in 1980 to address the separations allocation techniques discussed previously.

Separations may not be more understandable, auditable, and less subject to potential manipulation than FDC-7

It is questionable whether separations is any more understandable, auditable, and less subject to potential manipulation than FDC-7. This is because separations procedures are extremely complex, have been subject to little Commission scrutiny, and allow the carrier latitude in implementing the general guidelines in the Separations Manual.

The Separations Manual outlines the allocation methodologies to be used in separations studies; however, it does not specify the detailed procedures underlying those methodologies. Rather, AT&T carries out the basic collection and organization of data

and detailed processes. In September 1979, FCC hired a contractor to analyze the relationship between the Separations Manual and AT&T's implementing procedures to assure they complied with the principles in the manual. 1/ The study's main conclusion was that

> " * * * the Separations Manual, as currently implemented by the Bell System in its Division of Revenues process, permits flexibility to such an extent that we have serious reservations as to its use as a reasonable device to determine the appropriate jurisdictional separation of telephone plant, costs and expenses."

In particular, the study was critical of the basic studies, which develop the factors used to apportion costs, as being updated and modified in an irregular manner and totally at AT&T's discretion. The study also expressed concern about AT&T's control over the data to which the studies are applied. In addition, the study questioned the use of separations as a cost manual. It made a series of recommendations aimed at giving FCC more understanding and control over AT&T's implementation of the Separations Manual; however, an FCC official told us that no action has been taken on these recommendations.

From our work at FCC's New York Field Office, we found that FCC from studies initiated in 1976 of New York Telephone (an AT&T affiliate) had also identified questionable areas in the implementation of separations procedures. Based on their findings FCC's New York auditors supported the findings of the contractor's study and noted that separations is not a cost manual.

In addition to these studies FCC officials, including the recently resigned Bureau Chief, agreed that separations procedures were arcane and that, in the absence of close FCC scrutiny, the potential existed for separations to be manipulated to produce cross-subsidy. An FCC accountant in the New York Field Office expressed the view that comprehensive auditing of AT&T's implementation of separations procedures could mitigate the problems highlighted above, but only if such auditing takes place. (FCC's efforts at auditing are discussed in ch. 3.)

To obtain an estimate of the resources required to have confidence in separations results, we asked the New York Field Office officials to estimate the time spent on their audit of New York Telephone and what it might take to accomplish similar audits in the other 22 operating companies. They estimated that since

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1/"A Study of Jurisdictional Separations to Compare AT&T's Interstate Settlements Information System with the Separations Manual and Division of Revenues Process" J. W. Wilson & Associates, Inc., Sept. 30, 1980.

1976 about 19 staff years had been spent on the New York Telephone audit but that based on the expertise they had developed future audits of individual companies might take about 9 to 14 staff years; therefore, an audit of all 23 AT&T operating companies could require from 207 to 322 staff years. In contrast, for fiscal year 1981 27 staff years were budgeted for all accounting and audit activities. Given the other responsibilities of this activity and the likelihood that additional resources will not be assigned of the magnitude required to audit all AT&T companies, we believe FCC should not present the Interim Manual as more auditable and less subject to manipulation than FDC-7.

MTS cross-subsidy of private line services is still possible

FCC officials also support the Interim Manual on the grounds that a separations procedures based approach will prevent MTS services from cross-subsidizing private line services. It has been alleged by FCC officials that such cross-subsidization occurred under FDC-7. As evidence of this, FCC officials cite the fact that the change from FDC-7 to the Interim Manual has shifted more costs from message services to private line services lowering the private line return (to about 3.5 percent) and raising the MTS return (to about 11.7 percent). FCC has recognized that by using separations procedures some additional cross-subsidy may be occurring; however, FCC officials are willing to accept the current result on the grounds that it represents a beneficial shift in costs and because they feel that through the use of separations a boundary has been drawn between message and private line services which will prevent further cross-subsidy.

While we would not contest the shift of cost responsibility from message to private line services and the evidence it gives of potential cross-subsidy under FDC-7, we question whether a boundary has been drawn betwen MTS and private line services as FCC suggests. We base our reservation on the concerns cited previously regarding the incentive, in the absence of close FCC scrutiny, for manipulation of the separations procedures and FCC's apparent inability to prevent such manipulation. We would also note that the Interim Manual allocates expenses using basically the same procedures contained in the August Manual.

While the problems in allocating facility costs among services have received the most attention because expenses are often allocated on the basis of special studies, the potential exists for expenses to be misallocated and thus cause cross-subsidy. In this regard, the administrative law judge who tried Docket 20814 stated that there were more potential areas for manipulation on the expense side of the allocation process than on the facilities side and that potential misallocations of expenses had not received sufficient attention. Officials in the Policy and Program Planning Division responsible for the Interim Manual agreed that the expense allocation procedures may allow some potential for cross-subsidy. As a result, they said FCC

will have to look closely at the rates proposed for private line services.

It is not clear to what extent separations procedures will be revised by the Joint Board

In its Report and Order issuing the Interim Manual FCC recognized many of the problems we have discussed and stated that it had convened a Federal-State Joint Board in June 1980 to look at separations procedures and make recommendations for Commission action to improve the separations procedures. The Joint Board was begun to look at the allocation of exchange plant because of FCC's decision to prescribe access charges and deregulate terminal equipment. 1/ The FCC official responsible for the Joint Board proceeding indicated that it would not involve a comprehensive look at separations and that, in particular, interexchange plant allocations was not a topic to be considered by this Joint Board.

Given this situation, it is not clear when the separations related problems of the Interim Manual will be revised. The FCC official responsible for the Interim Manual told us that if the Joint Board does not make all the necessary changes, FCC may make independent changes in the Manual; however, he could not be precise about when this would occur.

Prevention of intraservice cross-subsidy has not been clarified

In addition to the problem of cross-subsidy between MTS and private line services is the potential for cross-subsidy among private line services as well as among the various WATS services. To detect and prevent such cross-subsidy, FCC intends to rely on so-called noncost approaches and tariff review.

The noncost approaches are directed at the three conditions which allow a firm to engage in price discrimination. The firm must (1) have market power, (2) be able to segment its customers, and (3) be able to constrain arbitrage. 2/

To address the first condition, FCC has allowed entry into private line services. As was noted in chapter 2, competitors have made their greatest inroads into this sector; however, in the aggregate AT&T still has a dominant share.

1/Access charges and issues surrounding terminal equipment deregulation are discussed more fully in chapters 7 and 8.

2/Arbitrage is the simultaneous buying and selling of a telecommunications service in different markets in order to profit from a price advantage.

To address the second condition FCC, based on the view that differences in private line services are largely marketing distinctions designed to segment customers, is attempting to restructure AT&T's private line services into their generic components such as a local loop, a switch, and a transmission line. Such a restructuring would allow customers to buy only the services they need to meet their communications demands and not force them to purchase "packaged" services which could involve elements of cross-subsidy. While this approach has strong intuitive appeal, it is still being developed, and its success must ultimately depend, we believe, on establishing the cost of the generic components.

Regarding arbitrage FCC has attempted to relax the prohibitions on the resale and sharing of private line, WATS and MTS services. Allowing resale and sharing would mean that if a carrier attempted to underprice a service, its competitors could also buy that service, repackage it, and sell it to other customers.

As of June 1981 all resale restrictions on MTS and WATS services were removed. Some restrictions still exist on private line services. In particular, AT&T tariffs do not allow its private line services to be resold if the purpose of the resale is to provide a functionally equivalent MTS or WATS service. A senior public utility specialist in the Tariff Division told us, however, that the relaxation of resale restrictions on MTS and WATS have essentially mooted these restrictions on private line services, and the resale field in his view is "wide open."

These noncost approaches have a strong appeal and we encourage FCC to continue their development; however, it will be several years at best before the private line restructuring is completed. Further, we suspect it will be several additional years before their effectiveness can be determined. In the interim, FCC must rely on the review of individual tariffs to detect and prevent cross-subsidy. FCC officials noted, however, that they do not now have an acceptable FDC methodology for allocating costs among individual private line services. Their review of cost allocation procedures for individual tariffs will continue to be done on an ad hoc basis, and as one official put it "we will know an acceptable methodology when we see it." Commission officials view this uncertainty as beneficial, and the Bureau Chief during the time of our review, suggested that it might act as an incentive for AT&T to file a cost justification FCC would find acceptable. If an acceptable methodology is not produced, FCC officials indicated they would reject the tariff.

<u>The Interim Cost Manual is in part an ad hoc reaction to the U.S. Court of Appeals order to provide a legal WATS tariff</u>

In February 1979, MCI filed a petition with the U.S. Court of Appeals for the District of Columbia Circuit for review

of FCC's decisions which repeatedly found AT&T's 1973, 1974, 1975, and 1976 WATS tariff revisions unsupported by the data provided. FCC has, however, allowed the revisions to remain in effect. MCI challenged FCC's allowing the WATS tariffs to continue in effect for such a long period without a determination that those revisions were just and reasonable. In its April 1980 decision, the court 1/ in essence agreed with MCI and found that there must be some limit to the time tariffs unjustified under law can remain in effect, even if FCC is in no position to decide whether they are actually lawful. The court ordered FCC to develop a schedule for the expeditious resolution of this controversy. Developing a Commission-approved cost manual was part of the timetable FCC subsequently filed with the court, promising to decide the question by December 1980.

The initial Notice of Inquiry in the proceeding to develop a cost manual was issued in September 1979. It contained no mention of a separations-based approach, although the discussion did indicate FCC was dissatisfied with FDC-7 and wanted to consider alternatives. FCC stated that after receiving parties' comments it would issue a proposed manual. In June 1980 FCC did issue the proposed Interim Manual for comment and in December 1980 it was adopted.

FCC officials have stated that regardless of the court's order they would have gone with a separations-based approach. The language of FCC's Report and Order adopting the Interim Manual suggests, however, that the court's order had some effect. For example, in deciding not to modify and adopt FDC-7 as its cost manual FCC said

> "Because of our desire to implement an allocation methodology which would be understandable and auditable and because of our obligation under an order of the United States Court of Appeals for the District of Columbia Circuit to adopt a cost allocation manual in December 1980, we determined that an alternative approach was required."

Further, FCC said:

> "In evaluating the criticisms of our proposal to utilize jurisdictional separations results as a prime component of the interim cost allocation manual it is necessary to be mindful of the proper context for this task. We are obligated by order of the United States Court of Appeals to promulgate a manual on an expedited schedule. The proposal contained in the interim manual must be judged by two standards. First, it is an improvement over existing procedures and, second, it is superior to alternative proposals which can be implemented at this time."

1/MCI Telecommunications Corp. v. F.C.C., 627 F. 2d 322 (1980).

TARIFF PROVISIONS OF THE COMMUNICATIONS ACT IMPEDE FCC's ABILITY TO OBTAIN NEEDED COST DATA

FCC has specific responsibilities under sections 201 through 205 of the Commmunications Act regarding the approval of tariffs for individual communications services. 1/ These responsibilities are directed at giving FCC control over monopoly pricing abuses. In particular, FCC may, in the case of an excessive rate, issue an accounting order requiring the carrier to maintain a record of revenues received from the service in question, and after finding in a hearing that the rate is excessive, order a refund.

With the development of competition and the attendant potential for cross-subsidy, FCC's regulatory concern has expanded to detecting and correcting rates which are too low in addition to rates which are too high. FCC has required that rates be cost based and that costs be fully distributed among all services. To make this determination FCC requires carriers to file certain cost data supporting their tariffs. This data forms the factual basis for a review following which the Commission may

--find the tariff is unlawful on its face and, therefore, reject it not allowing it to take effect;

--find that the tariff has questionable aspects, suspend the tariff for a maximum of 5 months (after which it becomes effective) and set the tariff for hearing to determine its lawfulness; or

--find the tariff is lawful and allow it to become effective.

After the hearing, if FCC determines the rate violates the act, it may prescribe a just and reasonable charge.

FCC officials have stated that a carrier which is attempting to cross-subsidize has a strong incentive to provide enough cost data information to meet the statutory requirements but not enough for FCC to find the tariff unlawful on its face. During the ensuing hearing process an FCC official noted the carrier will continue to have an incentive to obfuscate the cost data supporting its rate. This in turn may extend the hearing process beyond the 5-month suspension period, thus allowing the tariff to take effect. Once the tariff is effective a powerful clientele will build among users who enjoy the artificially low rate while the low rate at the same time may thwart competition. The incentive to obfuscate cost data flows not only from a desire to behave anticompetitively but also from a natural desire by the carrier to avoid having its costs scrutinized by competitors.

1/A tariff contains the rates, terms, and conditions for a particular service. FCC's responsibilities are detailed in appendix I.

FCC summarized such a situation in its decision in Docket 20314 when it said:

> "Although we have conducted several in-depth investigations in which major AT&T tariffs have been found unlawful, in every case these findings of unlawfulness stemmed principally from AT&T's failure to justify its rate levels and rate structures with appropriate cost data. While the essentially negative findings on AT&T's cost justification in the WATS, DDS, and Hi-Lo investigations supported declarations of unlawfulness and the formulation of specific guidelines for the subsequent tariffs we ordered AT&T to file, the records in these proceedings disclosed little reliable cost of service information which could have formed the basis for a rate prescription. Despite our frustration, we had no recourse but to allow the unlawful tariffs to remain in effect until AT&T complied with our orders to file superseding tariffs."

The net result is a pattern of tariff filings, hearings, findings of unlawfulness, and rejection followed by a repeat of this pattern. As the Commission put it in Docket 20814:

> "Unjustified and unlawful tariffs have remained in effect often for years while under investigation, only to be replaced by other tariffs which themselves are later found to be unlawful. Where replacement tariffs have been found to be recognizably unlawful at the time of their filing, as in the case of the most recent WATS revisions we have had little choice but to exercise our rejection power with the unsatisfactory result that the former unlawful tariff must remain in effect for an even longer period of time. The paucity of useful cost information submitted by AT&T in this proceeding, and in Docket No. 19919 before it, has prevented meaningful progress toward the determination of lawful Series 2000/3000 rates. These two proceedings demonstrate the carrier's ability to frustrate the regulatory process by its failure to provide the kinds of information we require for a reasoned analysis of its tariffs."

One way we believe FCC could deal with a tariff it believes is too low would be for FCC to prescribe an interim tariff. If FCC prescribes a tariff which ultimately is higher than what the market will bear, then the carrier will seek to have the tariff revised by filing sufficient cost data to support the rate it would prefer. FCC officials have fully agreed with the value of prescription as a means to improve the quality of cost data they receive. FCC, however, has not used its existing prescription authority because FCC officials felt that past tariff hearings had not produced understandable cost data on which a prescription could be based. They felt that prescription had to be based on

understandable cost data in order to withstand potential court challenges by the carrier for whom a tariff had been prescribed.

FCC's statements involve circular reasoning which virtually assures that no prescription will be made--FCC cannot prescribe without adequate cost data but FCC cannot obtain adequate cost data without a prescription. To break this cycle we believe FCC needs the authority to prescribe an interim tariff based on the cost data which the carrier had submitted in support of its tariff. With this authority FCC can use its expertise and available cost information to make adjustments or correct deficiencies in the cost data the carrier filed. This interim tariff would go into effect at the end of the suspension period. To prevent FCC from keeping in effect indefinitely an interim tariff which might be so high as to cause the carrier to lose considerable amounts of business, we believe the interim tariff ought to have a limited lifespan--12 months would seem reasonable. During that time FCC could hold a hearing and based on the data presented in the hearing, prescribe a permanent tariff.

CONCLUSIONS

With the introduction of competition, development of costing principles and methodologies to guide in determining the appropriate rates for monopoly and competitive services has become a critical issue. FCC has struggled with this issue for over 20 years with what can only be characterized as limited success. While FCC has established the broad principle that costs should be fully distributed among all services, it has not come up with a long-term approach for implementing this principle.

FCC's initial approach--FDC Method 7--proved impossible to implement. It was hampered by two inherent flaws--the use of forecasting to allocate facility costs and the inability to reconcile through trial balancing the total costs obtained from FDC-7 with the total costs obtained from separations. We believe FCC contributed to the difficulties it experienced with FDC-7 by not following through with the development of a Uniform System of Accounts to support this costing approach, and by not exerting sufficient control over the implementation process.

In the face of these problems and a court deadline to develop a lawful WATS tariff, FCC has adopted an Interim Cost Manual which uses separations procedures to allocate costs among four broad categories of service. The Manual is intended to be an interim solution until a more concrete, long-term approach can be developed.

We believe the Interim Manual represents an illusory improvement over FDC-7, and will prove to be of little value in dealing comprehensively, over the long run, with the potential for cross-subsidy. Although the Interim Manual eliminates the problems caused by forecasting and trial balancing, because it relies on separations procedures to allocate facility costs,

it may not be any more understandable, auditable, or less subject to potential manipulation than FDC-7.

The Interim Manual does not address all potential areas of cross-subsidy. In particular, FCC does not have a comprehensive approach for allocating costs among WATS and private line services. FCC intends to rely on currently undeveloped, and untried noncost approaches--resale and sharing, and private line restructuring--as well as ad hoc tariff review to prevent cross-subsidy among these service categories. Individual tariff review, however, represents a continuation of the same unsatisfactory approach which FCC has used in the past but now without a clear guideline of what is an acceptable allocation methodology. The noncost approaches while theoretically attractive are simply unproven.

We see a reasonable solution to the problem of interservice cross-subsidy occurring in several stages and using several techniques. One way to reduce the potential for misallocating joint and common costs is to prohibit such costs to the greatest extent practical. In this regard, we discuss in chapter 6 the use of separate subsidiaries. Even with separate subsidiaries, however, there will still be opportunities, particularly in the interexchange service markets, for cross-subsidy.

For now we believe FCC needs to revise the Interim Cost Manual in two areas. First, the service categories should be expanded to include appropriate groupings of WATS and private line services. These groupings which should reflect the relative competitiveness, particularly of the various private line services, would improve FCC's ability to detect cross-subsidy. Second, to provide allocation methodologies for the expanded service categories and to alleviate concerns about carrier discretion in the implementation of separations procedures, FCC needs to develop an independent set of allocation factors. Such factors, which would be based on the principle of relative use, could be drawn from separations, and from FCC's experience with FDC-1 and the Seven Way Cost Study. Their key feature should be, however, that they are clear and unambiguous and allow minimal carrier discretion in their measurement or application.

For the long run we view the revision of the USOA as the cornerstone of an acceptable costing approach. While we will discuss the USOA revisions more thoroughly in the next chapter, we believe FCC must move in the direction of a USOA which makes as much direct attribution of costs to services as possible and which captures the factors used to allocate joint and common costs among services.

To address the problem of trial balancing, we believe the revision of the USOA needs to be coordinated with the revision of separations procedures. While we will discuss this further in the next chapter, a USOA which is coordinated with separations should eliminate the problem of trial balancing and would allow

a change from top-down costing to an approach where costs of a particular service are aggregated from the bottom up. We would also anticipate that the long-term approach would incorporate the private line restructuring now under consideration. Certainly, we would expect the revised USOA to incorporate accounts which would reflect and capture the costs of the generic private line components.

The overall goal needs to be a methodology which provides clear, unambiguous allocation of costs among service categories. This methodology should provide a benchmark for detecting and measuring cross-subsidy. As competitive conditions warrant, pricing deviations should be allowed.

Other noncost approaches should also be vigorously pursued which can compliment the methodology's effectiveness in preventing cross-subsidy. In this regard, we favor the relaxation of resale and sharing restrictions on all services. This should allow arbitrage of a carrier's services if it attempts to cross-subsidize one service with another. We also believe FCC needs to evaluate the feasibility of using generic components in services beyond the private line services currently under consideration.

We also believe that an expansion of FCC's authority to allow it to prescribe interim tariffs would be an important compliment to the development of a viable allocation methodology and the use of noncost approaches. Interim prescription would go a long way toward increasing a carrier's incentives to supply cost data to clearly support its rates. Amending the Communications Act to provide such authority would also bring the tariff provisions into line with the reality of developing competition and the potential for cross-subsidy.

RECOMMENDATION TO THE CONGRESS

We recommend that the Congress amend section 205 of the Communications Act to give FCC the authority to prescribe an interim tariff based on the cost data which a carrier submits in support of its tariff. The interim tariff would go into effect at the end of any suspension period FCC might designate. The interim tariff should have a limited lifespan. During this time FCC will hold a hearing and at the hearing's conclusion FCC, based on the data presented in the hearing, will prescribe a permanent tariff.

RECOMMENDATIONS TO THE CHAIRMAN, FCC

We recommend that the Commission develop a clear, unambiguous cost allocation methodology in the near term by

--Revising the Interim Cost Manual to (1) expand the number of service categories and (2) develop an independent set of allocation factors which would allow minimal carrier discretion in their measurement and application.

We also recommend that over time the Commission

--Revise the Uniform System of Accounts to provide a cornerstone for an acceptable long-term costing approach.

--Coordinate the system of accounts' development with revision of separations procedures and the restructuring of private line services.

--Develop, based on the revised system of accounts, a costing approach which aggregates costs of a particular service from the bottom up.

--Initiate a proceeding to evaluate the feasibility of using generic components in services beyond the private line services currently under consideration.

CHAPTER 5

FCC HAS MADE LITTLE PROGRESS IN REVISING THE UNIFORM SYSTEM OF ACCOUNTS

The Uniform System of Accounts is a fundamental source of regulatory information. Adopted by FCC in 1935, subsequent rapid technological change and the subsequent introduction of competition have brought about the need for its revision. The system of accounts cannot provide the cost of service data FCC needs to address the problem of cross-subsidy by a carrier operating in both monopoly and competitive markets. FCC has since 1978 been attempting to revise the system but without success. Management problems we identified in a November 1979 report 1/ are still uncorrected and FCC has not decided on the overall direction or structure for the system. We are making a series of recommendations to resolve the management problems in order to have this project receive the priority it deserves.

WHY REVISE THE UNIFORM SYSTEM OF ACCOUNTS?

The Uniform System of Accounts FCC requires for domestic common carriers provides a means for classifying, recording, interpreting, and reporting a carrier's financial facts. As such, it is a fundamental source of information for the regulator. FCC adopted the current USOA in 1935 when its basic concern was the overall financial results of the regulated firm. The USOA is broad and provides data for reviewing overall investment and expense levels, property valuation and depreciation rates. The USOA has also provided a basis for review of carriers' overall revenue requirements, including the determination of a fair rate of return computed on an appropriate rate base.

Two events have served as a catalyst for revising the existing USOA. First, technological change has created new means of providing telecommunications services which are not reflected in the antiquated accounts. For example, current plant accounts do not reflect the use of microwave and satellite facilities for interexchange communications. This same technological change has created a variety of new services not envisioned when the USOA was established. Thus, a revision of the USOA is needed to reflect current technologies and business functions which were not contemplated when the original USOA was formulated. Second, in response to technological change competitive entry has been allowed. As noted in the previous chapter, this has created an incentive for cross-subsidy. Thus, the Commission has been concerned with the costs (and rates) for individual services. Because it focuses on companywide results the USOA has proved to be little, if any, help in resolving issues regarding the

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1/"Outlook Dim For Revised Accounting System Needed For Changing Telephone Industry," (FGMSD-80-9, Nov. 13, 1979).

appropriate rates for various services. To obtain service level cost data several special studies must be performed. 1/

The use of the special studies raised the potential for inaccurate distribution of costs and, thus, raised the potential for cross-subsidy. FCC has recognized this problem for some time noting in Docket 19129

> "Without belaboring the problems relating to the accounting system or enumerating all its deficiencies, we need simply say that we recognize the inadequacies of the uniform system of accounts for our regulatory purposes. In recent decisions involving AT&T interstate services, * * * we were hampered in our ability to determine the lawfulness of Bell's rates and rate structures by the lack of information as to investment, expenses and revenues associated with specific services and sub-services. Although AT&T conducted special studies for this purpose, even these, we found, were inadequate."

Subsequently, in June 1978 FCC began a proceeding to revise the USOA.

WHAT FCC SET OUT TO DO

In June 1978, the Commission adopted a Notice of Proposed Rulemaking entitled "Revision of Accounts and Financial Reporting for Telephone Companies." The notice outlined a proposal for extensively revising the USOA, the data collection, and recordkeeping and reporting requirements for telephone companies. The Commission set forth several objectives for a new system:

--"It will form the basis for financial reports, including both balance sheet and income statement reporting.

--"It will serve as a data base and a foundation for managerial decisionmaking and internal management reports by the carriers."

--"It will provide sufficiently detailed disaggregated cost and revenue information for derivation of costs and revenues of individual services and rate elements, for pricing decisions and other managerial decisionmaking by the carriers.

--"It similarily will provide detailed disaggregated cost and revenue information for derivation of costs

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1/To obtain the unit costs of plant used in a particular service, two special studies are done. The first identifies the characteristics of telecommunications plant associated with the service. The second determines the cost of identified plant characteristics.

and revenues of individual services and rate elements for rate review and continuing surveillance purposes of this Commission (and other regulatory bodies which adopt the revisions) and provide a basis for rate prescriptions, where appropriate.

--"It will facilitate the breakdown of costs between interstate and intrastate jurisdictions ('jurisdictional separations').

--"It will permit analysis of facility and plant utilization, including studies of the causes for each category of expenditure and review of service quality and service efficiency.

--"It will be structured so as to allow for regulatory and independent auditing and tracing of questioned entries."

FCC proposed a detailed system of accounts for revenues, plant, and expenses. It also proposed to capture within the USOA in Primary Allocation Records information which could be used to allocate costs which could not be directly attributed within the system of accounts. The revision was intended to support the FDC-7 cost methodology information needs and, in the process, improve on AT&T's August Manual which relied on special studies. The revised USOA was expected to be useful in supporting other costing methodologies such as FDC-1. It was also intended to provide the information needed to facilitate separations procedures discussed in chapter 4.

The Commission received a series of comments from telecommunications common carriers, State public utility commissions, and other interested individuals. After analyzing the comments, the Commission, in August 1979, issued a Supplemental Notice of Proposed Rulemaking to further clarify issues and request additional comments on the proposed system. The Commission has not issued any additional notices.

MANAGEMENT WEAKNESSES IN FCC's ATTEMPT AT USOA REVISION

In November 1979 we reported on the status of the USOA revisons. We identified a series of management problems which indicated that the revision might encounter difficulties in its implementation and use. To address these problems we recommended, among other things, that the Commission Chairman appoint an official to head the project, define the needs of intended users of the revised system, and coordinate the revision with other proceedings, including the development of cost allocation methodologies.

In its formal reply to our report, the Commission stated that our report was critical, but very constructive. Therefore,

the Commission believed our report would be useful in the future development of the USOA. The Commission said it would take the following steps:

--Establish a task force, headed by a senior staff member and composed of individuals with appropriate background and expertise, to design the revised system.

--Make development of an appropriate implementation schedule a priority assignment of the task force.

--Require regular progress reports to division chiefs and the deputy chief for policy to ensure that the Commission's overall goals are accommodated and that appropriate coordination is maintained among related major actions.

--Direct the task force to develop, as soon as possible, a management paper defining the output that the various users of the accounting system require, keeping in mind the priority to be accorded each of these needs.

--Direct the task force to evaluate the procedural options and outline steps that will ensure that appropriate input from the industry and State regulators will be obtained.

ALMOST NO PROGRESS HAS BEEN MADE IN REVISING THE USOA

The revision of the USOA has made very little progress. A second Notice of Proposed Rulemaking scheduled for Commission action in July 1980, which would have proposed a set of revenue accounts was never released. The project is now in limbo. Although the Commission Chairman promised the Congress in 1978 that it would begin implementing the new system in January 1981, the Commission economist who headed the project recently estimated that if the Commission could get the project moving again, implementation would not occur before January 1985.

There are two broad reasons for this current state of affairs.

--FCC has not given this project adequate attention, to the point of not implementing its promised reforms.

--Revision of the Cost Manual and other Commission actions have kindled a debate over whether the Commission should go forward with the USOA revision as originally planned.

FCC has not given revision adequate attention

Although it has long recognized the need to revise the USOA, FCC has not given this effort adequate attention. Reflecting

this fact, the project still lacks a leader with the authority to direct the project and an appropriate staff to implement the revision. In addition, other issues, such as intended user needs, have not been adequately addressed.

There has not been, to date, an individual with both the responsibility and authority to direct the USOA revision. Following our report FCC assigned overall responsibility for the revision to the Deputy Bureau Chief for Policy. This individual, at the time of our review, told us that the Chief of the Economics Division was to be assigned specific responsibility within FCC for all phases of implementation and development of the project. This position, however, was vacant during most of 1980. Although a Division Chief was named in November 1980 the Bureau Chief at the time felt that he knew nothing about the project and was not qualified to head the effort. This left an economist in the Economics Division who has worked on the project since its inception as the person largely responsible for the revision. The Bureau Chief told us he was reluctant to give the economist free rein with the appropriate authority to direct the project because the economist did not have the necessary range of experience.

The Common Carrier Bureau Chief wanted the individual heading the project to be able to balance the theoretical needs of the accounting system with certain practical realities--for example, does FCC have the computer capability to digest and use the detailed information it proposed to collect? His solution was to recruit an experienced individual from outside FCC who would become the new Chief of the Accounting and Audits Division and who would head this project. Responsibility for the project would then be transferred from the Economics Division to the Accounting and Audits Division.

In November 1980, however, the outside individual the Bureau Chief had recruited to head the project decided not to join FCC. Shortly thereafter in January 1981 the Bureau Chief resigned. The project now remains largely the responsibility of the same economist. To assure coordination with the interim cost manual proceeding (discussed in ch. 4) the Policy and Program Planning Division Chief has become more involved.

FCC has not set up the task force to revise the USOA as stated in its reply to our 1979 report, and over the last year (1980) the resources assigned have amounted to three economists--including the project leader--and one accountant. This is clearly an inadequate staff. As FCC internal documents indicate, additional accountants must be involved. Engineers are also needed to, among other things, develop plant accounts and to assist with the design of certain expense accounts. Attorneys are also necessary to assist in the drafting of Commission orders.

In response to our recommendation that FCC define the needs of intended users, a user study was performed; however, it covered only the revenue account information FCC officials would need and

did not deal with plant or expense accounts. Surprisingly, this study was done by a group in the Enforcement Division which had not worked on the USOA revision. The study's results, besides being limited, were contested by some of the individuals working on the revision and, as a result, it is not clear what impact this study will have on the final USOA revision.

Regarding other recommendations in the 1979 report concerning State coordination, coordination with other proceedings, and identifying industry reporting requirements, FCC has taken little indentifiable action.

Fundamental debate is occurring over the direction of the USOA revision

Underlying the management problems discussed previously has been a debate over the general direction and structure for the revised USOA. Since its first notice in 1978, FCC has adopted a separations based Interim Cost Manual and rejected FDC-7. Since the initial USOA revision was intended to provide the data to support FDC-7, a debate has developed among FCC's staff whether the USOA should be revised to provide cost accounting data or should restrict itself to financial data. Beyond this fundamental question the debate also included issues concerning whether FCC should require the detailed data it initially proposed to collect and whether it can digest such detailed data, as well as what the relationship should be between the USOA and the Functional Accounting System AT&T is developing. Debate on all of these questions has contributed to the lack of progress on the USOA revision.

The revision of the USOA was intended to provide the accounting and allocation data to support FDC-7. With the shift from FDC-7 to the separations based Interim Cost Manual, the former Bureau Chief in July 1980 halted work on the USOA revision and in August 1980 ordered a change in direction away from FDC-7 to an approach more in keeping with the Interim Cost Manual. After the resignation of the Bureau Chief in January 1981 the change in direction never got down to specifics, and there simply is no consensus on what form the revision should take.

Underlying this situation is a fundamental debate over what should be the basic purpose of the USOA. In January 1981, the Acting Chief of the Accounting and Audits Division suggested that the revised accounting system should produce strictly financial data to which allocation procedures could then be applied to provide costing information. This reflected his view that accounting systems should limit themselves to financial data. This suggestion prompted a sharp reply from Economics Division officials pointing out, correctly we believe, that without cost accounting data FCC will not be in a position to (1) assess the justness and reasonableness of particular rate structures and rate levels; (2) prescribe rates; and (3) maintain proper surveillance over money and property flows which

may be involved in cross-subsidization between services. The Chief of the Policy and Program Planning Division acknowledged the existence of this debate and stated frankly that there is no consensus on which way the project should go.

In the face of numerous consultant studies, Commission documents, and the statements of knowledgeable officials supporting the need for cost accounting data, we do not believe that such a fundamental debate ought to be occurring. Such a debate should have been resolved years ago, and its occurrence now illustrates in the starkest terms the inadequacy of FCC's efforts to address one of its most basic and necessary regulatory responsibilities.

Beyond this fundamental question, with the retreat from FDC-7, there is no clear view of how the USOA, assuming it is intended to include cost accounting data, should be constructed. The economist who has headed the project has proposed that the USOA be revised to "support" separations. Under this proposal the USOA would include cost categories which are the same or in some cases more detailed than those in separations. As noted in chapter 4, accounts in the USOA are currently divided into more detailed categories for separations purposes. This proposal would also capture in the Primary Allocation Records the detailed usage data which is generated while doing basic studies for separation purposes. Such an approach would provide a stable base of detailed cost and allocation data which could be used for jurisdictional separations and cost of service purposes.

The author of this approach argues that the unification of financial accounting (the USOA) and separations accounting will save the carriers money since they have about one-third of their accounting departments currently working on separations. Capturing the detailed usage information in the Primary Allocation Records will allow for detailed cost of service allocations. It is also argued that incorporating the detailed data developed for separations into the USOA will promote greater accuracy in the separations procedures.

This approach may not be as novel as it first seems. As noted earlier, one of FCC's stated objectives for the revised USOA has been to facilitate the breakdown of costs between interstate and intrastate jurisdictions. Further, under this approach FCC's rejection of FDC-7 does not, in itself, make major changes in the information requirements of the Commission, except in the areas of forecasting and recording of deviations between forecasted and actual use.

This approach is not supported by the entire Common Carrier Bureau staff. Several have expressed a desire for a "less detailed" system of accounts. The term less detailed, however, has several meanings. One meaning, supported by the Bureau Chief during the time of our review, is that it should not be necessary to have all possible information contained in the chart of

accounts as long as the information is properly collected and maintained in supporting records. It appears that a less detailed chart of accounts may be in response to the strong initial criticism made by carriers of the extremely detailed accounts proposed in the June 1978 Notice of Proposed Rulemaking.

Another area where less detail has been suggested is in the amount of direct attribution made in the system of accounts. The Commission's original proposal envisioned a large amount of direct attribution of expenses and facility costs to services. Such direct attribution would require extensive, detailed record keeping and reflected the Commission's decision in Docket 18128 to have costs attributed on a cost causative basis. With the Commission's apparent shift from FDC-7 to an allocation methodology based on relative use, Bureau officials have suggested that less direct attribution be required with costs allocated among services based on usage factors. Some officials have questioned whether FCC could review and audit the large amount of data a high degree of direct attribution would generate.

A final issue under consideration is what the relationship should be between the USOA and AT&T's functional accounting system. This system has been under development since the mid-1970s and is intended to function as a management information system. In light of the considerable time and money which has gone into the system, AT&T has suggested that FCC adopt it as a USOA. Whether the system can provide the cost of service FCC needs and whether FCC could administer or audit this system remains unresolved. In July 1980 FCC hired a contractor to evaluate these issues. The contractor's report was released by FCC for comment by interested persons in July 1981.

CONCLUSIONS

The USOA--a fundamental source of regulatory information--needs revision. It cannot provide the cost of service information FCC needs to effectively regulate a carrier operating in both monopoly and competitive markets.

FCC needs to give this effort immediate and priority attention--attention which has not been given this project although recommended in our 1979 report. In particular, an individual with sufficient authority and responsibility is needed to direct the project. There are fundamental differences of opinion among the individuals involved in the project--particularly the economists and accountants--over the direction the revision should take. The attempt by the Common Carrier Bureau Chief during the time of our review to bring in an outside individual who could head the project had merit. Presumably this person, having not been party to past disagreements, could have used his authority and experience to forge solutions. While the failure of this approach is lamentable, it ought not to be allowed to paralyze the project.

The individual responsible for directing the project needs to head a group consisting of accountants, economists, engineers, and attorneys whose function will be revising the USOA. We do not take a position regarding whether this group needs to be a task force as FCC proposed initially, or ought to be attached to a particular division as the recently resigned Bureau Chief proposed; however, we do believe that revising the USOA should be this group's primary responsibility. To further introduce accountability, we believe FCC needs to issue within a short timeframe (3 months would seem reasonable) a schedule for the completion of the USOA revision and report annually to its legislative committees its progress in meeting this schedule. 1/

Regarding the direction and structure of the USOA, we believe, at a minimum the USOA must be revised to reflect in its accounts the current technologies used to provide telecommunications services and the current functions of the telecommunications business. To the extent FCC intends to restructure AT&T's tariffs in private line as well as other services (as was discussed in chapter 4) into generic components the accounts and these components must be closely coordinated.

We believe the issue of whether the revised USOA ought to be a cost accounting system must be resolved once and for all. The Commission needs cost of service data. Therefore, cost accounting needs to be part of the USOA revision so that the needed allocation data can be captured in the Primary Allocation Records, in a systematic manner which can be audited and thus monitored for potential manipulation.

We believe there is merit in the concept of coordinating the revision of the separations process and the revision of the USOA. Certainly, it makes sense to have the same plant categories in both systems, thus eliminating the process of transferring costs from one to the other. In addition, the basic studies used in separations for interstate/intrastate allocations may apply to the division of interstate costs among services. Clearly defining when and how the studies will be done and capturing the study results in the USOA could resolve some of the problems of manipulation discussed in chapter 4. How much of this might be done in the USOA and how much through revisions in the separations manual is an issue FCC will have to resolve as the project progresses.

On the issue of direct attribution, we, in principle, favor as much direct attribution as possible. We recognize that the

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1/While this report was being finalized, the Congress passed the Omnibus Budget Reconciliation Act of 1981, P.L. 97-35 (95 stat. 357) which requires FCC to complete the revision of the USOA as soon as practicable and to report its progress annually to each House of the Congress.

additional costing precision which such attribution might gain is obtained at a cost of more detailed accounting and a concomitant increase in the amount of auditing needed to have confidence in the data.

Overall, we believe FCC's goal needs to be a USOA which reflects current technology and business functions and captures allocation data in a clear, usable form. The net result must balance, however, the ideal of a highly detailed system--probably articulated best in FCC's June 1978 Notice of Proposed Rulemaking--with the realities of what FCC reasonably can digest and audit while at the same time having confidence in the cost of service data the system produces.

RECOMMENDATIONS TO THE CHAIRMAN, FCC

To produce a revised USOA we recommend that the Commission

--Establish a group consisting of accountants, engineers, economists, and attorneys to work primarily on the USOA revision.

--Appoint an individual, with demonstrated leadership ability and sufficient knowledge of the project, to head the group and give this person clear authority over the group.

--Develop a timetable establishing a swift but realistic schedule for completing the project.

--Update the USOA to reflect current technology and business functions and to capture necessary allocation data in a form which can be audited and reviewed. As part of this effort, FCC should explore opportunities to merge the separations process and the USOA to increase the accountability and reduce the overlap in both systems and examine opportunities for direct attribution while balancing the benefits of such attribution with its cost.

CHAPTER 6

DEREGULATION OF ENHANCED SERVICES AND CUSTOMER PREMISES EQUIPMENT--USING SEPARATE SUBSIDIARIES AS A PROCOMPETITIVE TOOL

The question of how best to promote competition in the domestic telecommunications industry, along with its benefits of more rapid innovation and broadened consumer choice, is one which for a number of years has occupied the attention of FCC, the Congress, the courts, and the National Telecommunications and Information Administration, among others. The question essentially centers on considerations of how to nurture and protect competition during the transition from a highly concentrated industry structure, dictated in part by an earlier technology, to a less concentrated and more diversified, competitive structure made possible by new technologies.

FCC, in its Computer II Decision (Docket 20828) adopted in 1980 and in a series of less comprehensive and less far-reaching decisions adopted earlier, has embraced an approach to the transition-to-competition issue which allows for the relatively free entry of new firms as well as the participation in new and emerging product and service areas by long established, monopoly-based common carriers. This approach is predicated on the use of a separate subsidiary device to insulate a dominant carrier's newly "competitive" operations from its traditional monopoly offerings as a way of preventing the abuse of market power generally and, particularly, as a means of preventing cross-subsidization of the firm's competitive offerings by its regulated monopoly offerings. The separate subsidiary requirement does not in itself eliminate or even significantly reduce a firm's incentives to engage in anticompetitive behavior, but, combined with the proper safeguards and regulatory oversight, it can render anticompetitive conduct easier to detect and penalize.

FCC's adopted approach is novel and largely untested, certainly in the manner and on the scale proposed in the Computer II proceeding. How successful it will be in protecting the competition and securing its benefits for the public only time will tell. We believe that FCC will have to go well beyond the safeguards currently provided for in Computer II if there is to be any assurance of success in encouraging and protecting competition in the domestic telecommunications industry.

FCC's SECOND COMPUTER INQUIRY

The FCC rulemaking proceeding officially referred to as the "Second Computer Inquiry" (popularly known as Computer II) (77 FCC 2d 384(1980)) represents the culmination of a more than decade-long effort on the part of FCC to address the regulatory

questions and problems raised by the confluence and interdependence of communications and data processing technologies. The First Computer Inquiry (Computer I) (28 FCC 2d 267(1971)) initiated in 1966 and concluded in early 1971 sought information regarding actual and potential computer uses of communications facilities and services as well as views and recommendations concerning whether a need existed for new or improved common carrier services or for revised rates, regulations and practices of carriers to meet the emerging requirements for the provision of data processing, or other computer services involving the use of communication facilities.

Two basic regulatory issues were addressed by FCC in the First Computer Inquiry: (1) whether data processing services should be subject at all to FCC regulation under title II of the Communications Act and (2) whether, under what circumstances and subject to what conditions or safeguards, common carriers should be permitted to engage in data processing. In addressing the first issue, FCC determined that data processing services should not be regulated even though transmission over common carrier communications facilities was involved in linking user terminals to central computers. This "forbearance" from regulation regarding data processing entailed a necessity to distinguish regulated communications services from unregulated data processing services and led to the adoption of a set of definitions to assist in making such determinations.

In addressing the issue of common carrier participation in data processing offerings, FCC observed that common carriers, "as part of the natural evolution of the developing communications art," were rapidly becoming equipped to enter into the data processing field, if not by design, by virtue of the fact that computers used for conventional communications services could readily be programed to perform data processing services. Regarding whether common carriers should be permitted to participate in competitive data processing offerings, the Commission stated that it could not find the necessary social, economic or public policy considerations which would require or even justify an outright prohibition against the furnishing of data processing services by common carriers. Accordingly, the Commission decided to permit common carrier participation in the data processing area under a regulatory scheme embodying various conditions and safeguards in a concept of "maximum separation" of activities which are subject to common carrier regulation (title II of the act) from nonregulated activities involving data processing.

Under FCC's maximum separation scheme, common carriers desiring to provide data processing services would be permitted to do so only through separate corporate affiliates using separate books of account, separate officers, separate operating personnel, and separate equipment and facilities devoted exclusively to rendering data processing services. Such conditions, it was felt, would obviate foreseeable abuses, including derogation of carrier communications services to the public, abuses or limitations regarding free competition (because of the carrier's

access to customers as a provider of communications services) as well as cross-subsidization and improper pricing. The maximum separation requirement applied to any carrier with annual revenues in excess of $1 million.

In addition to permitting the offering of data processing services only through a separate affiliate, FCC in its Computer I Decision provided that: (1) no carrier subject to its proposed rules would be permitted to engage in the sale or promotion of data processing activities on behalf of its data processing affiliate, (2) a data affiliate would be prohibited from using the name of its related common carrier in its promotions and from using in its corporate name any words or symbols contained in the name of its affiliated carrier, and (3) a carrier would be barred from obtaining any data processing service from its data affiliate. The purpose of this last prohibition was to prevent any arbitrary manipulation in the allocation of revenues and expenses between a carrier's regulated and unregulated service offerings, since, among other effects, excessive payments by carriers to data processing affiliates would enable the affiliates to unfairly underprice their competitors in the data processing market.

The First Computer Inquiry was a vehicle for identifying and better understanding the problems spawned by the convergence of computer and communications technologies taking place at that time. However, many of its basic assumptions as well as its definitions and distinctions were rendered outmoded by fast-moving technological developments, particularly advances in large-scale integrated circuitry and micro-processor technology which permitted fabrication of mini-computers, micro-computers and other special purpose devices which are capable of duplicating many of the data processing capabilities which were previously available only at centralized locations housing large-scale, general-purpose computers.

"Distributed processing" which allowed computers and "smart" terminals to perform both data processing and communications control functions within the communications network and at the customer's premises revealed the inadequacy of the Computer I definitional structure. The advent of this process compelled a thorough reexamination of the approach used by FCC to distinguish regulated communications services from unregulated data processing services. Moreover, an issue which had been skirted in the First Computer Inquiry; namely, AT&T's ability to participate in competitive data processing offerings in light of the terms of a 1956 antitrust settlement with the Department of Justice could no longer easily be ignored after FCC's 1977 Dataspeed 40/4 decision. The decision included the issue of computer processing applications incorporated into terminal equipment devices and the need to determine whether such equipment should be offered as part of a regulated communications service. The Commission determined that AT&T could offer its Dataspeed 40/4 terminal as part of a tariffed communications service. This determination, however,

was made subject to an examination in the Computer II proceeding of the issues raised by a carrier's provision of peripheral devices which incorporate computer information processing functions.

These changes in communications and data processing technology, led FCC to conclude that "technology may have rendered meaningless any real distinction between 'terminals' and computers." FCC further concluded that a revised definitional structure, standing alone, would not adequately resolve the issues, and that the regulatory problems arising from the interplay of data processing and communications would have to be addressed by way of a more comprehensive approach. The approach would need to accommodate the market applications of computer processing technology and consider the realities of the marketplace and user needs.

Throughout the protracted Computer II proceeding, which was initiated in 1976 and ended in late 1980, with the Commission's Final Decision on Reconsideration, 1/ the Commission continued to wrestle with the difficult problem of devising a workable definitional approach. FCC sought an approach which would distinguish regulated communications services from unregulated data processing services, as well as dealing with other important issues, for example (1) the need to define the appropriate scope, nature, and mode of regulation to be applied to innovative service and product offerings of common carriers and (2) the desire to somehow find a way to allow AT&T to participate in the evolving communications/ data processing markets given the 1956 Consent Decree.

The Commission's final decision in Computer II was adopted on April 7, 1980. This decision drew a boundary between "basic services" (i.e., traditional "pipeline" transmission services) and "enhanced services" (see p. 17) made possible by rapidly evolving computer and electronic technology. The decision also provided for FCC forbearance from traditional title II common carrier regulation in the case of enhanced service and terminal equipment offerings 2/ of common carriers under its jurisdiction. As an alternative to traditional price/earnings regulation in this area, FCC proposed imposing a regulatory scheme involving a separate subsidiary requirement (an extension of the maximum separation concept developed in Computer I) for carriers deemed

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1/In a real sense, the Computer II proceeding (77 FCC 2d 384(1980)) is far from over. The complicated details of its implementation have yet to be worked out.

2/Customer premises equipment (CPE) is a term which is used interchangeably with the expression "terminal equipment" to signify those devices, ranging in sophistication from conventional black dial telephones to state-of-the-art computer terminals, which are located at the customer's premises and attached to the communications network.

dominant (in the final decision this was determined to be AT&T and GTE) as well as an unlimited resale requirement designed to ensure the continued widespread availability of quality "basic" telecommunications services for the benefit of the public and for use as the foundation for providing a variety of enhanced services.

Much of the final decision was devoted to a discussion of the specific conditions, separation requirements, and competitive safeguards which would be imposed on dominant carriers as prerequisites for their participation in competitive offerings of enhanced services and deregulated terminal equipment. The final decision also set forth FCC's rationale for concluding that its alternative regulatory scheme would permit AT&T's participation in enhanced service and terminal equipment offerings, notwithstanding the constraints imposed by the 1956 Consent Decree.

On Reconsideration of its Final Decision in October 1980 (84 FCC 2d 50(1980)), the Commission made relatively few changes to the regulatory framework and requirements set forth in the final decision other than to remove GTE from the category of dominant firm and, as a result, from the requirement of establishing a fully separated subsidiary with all of the attendant Computer II conditions and requirements. Henceforth, only AT&T would be subject to the full range of Computer II regulatory requirements and competitive safeguards.

In both its final decision and in its reconsideration of Computer II, FCC had relatively little to say on the specific form, organization, and capitalization of separate subsidiaries or on the grouping of product and service offerings within separate subsidiaries. Regarding the question of financing separate subsidiary operations, including the valuation and transfer of assets to the separate subsidiary(ies), the Commission stated that it would be appropriate to wait until the carrier submits its plan for capitalization of the separate entity before considering questions of outside financing and related considerations. The Commission's decision allows, but does not require, the creation of multiple separate subsidiaries for the offering of various types of enhanced services and customer premises equipment. Thus, a carrier may choose to provide both enhanced services and customer premises equipment through a single separate subsidiary which may also engage directly in the manufacture of terminal equipment. There is every reason to believe that a carrier would prefer this type of conglomerate organization which provides maximum internal flexibility and reduced visibility for regulatory scrutiny over a multiple separate subsidiary organizational scheme which would have just the opposite effect.

Under the Commission's present time table for implementing Computer II, the Commission will require all new carrier terminal equipment offerings to be provided on an unbundled and detariffed basis as of March 1, 1982. By that date also, all enhanced services offered by AT&T through facilities used in

interstate communications will have to be provided through the "separate subsidiary structure" provided for in Computer II.

ALTERNATIVE APPROACHES TO THE PROMOTION OF COMPETITION

Although FCC in its Computer II Decision has focused on the separate subsidiary device as a means of nurturing and protecting emerging competition in telecommunications product and service offerings, two other approaches--market segmentation and divestiture--have been suggested.

The difficulties inherent in pursuing a policy aimed at encouraging the growth and spread of telecommunications competition wherever feasible and at the same time curbing the incentives for anticompetitive abuse of market power constitute a significant challenge for policymakers and regulators alike. The difficulty in fostering and preserving effective competition in a monopoly-dominated industry is so great, in fact, that some feel there is no alternative but to segment the industry into monopoly and competitive sectors and to preclude the anticompetitive abuse of monopoly power by excluding the dominant firm entirely from competitive offerings. Others suggest that the optimal solution lies in divestiture, that is, the restucturing of the dominant firm through a forced spinoff of certain operations in such a way as to reduce or eliminate the firm's monopoly power, and thereby alter its incentives and its ability to behave anticompetitively.

Limiting the dominant carrier to the provision of basic telecommunications services

Those who advocate limiting the dominant carrier to the provision of regulated, basic telecommunications services argue that its overwhelmingly dominant position in the industry makes it virtually impossible for regulatory authorities to effectively oversee and regulate its participation in competitive markets in such a manner as to ensure against cross-subsidy, predatory pricing, and other forms of anticompetitive abuse of market power. To obviate such problems and to ensure fair and effective competition in those markets where competition is deemed to be, at least potentially, workable, it is suggested that the dominant carrier be confined essentially to the role of a carrier's carrier, that is, providing the basic transmission capacity which would be available for purchase on an equal and nondiscriminatory basis to all comers to satisfy their particular telecommunications needs and to serve as the transmission building blocks for a wide array of enhanced telecommunications services offered by other carriers.

Although confining the dominant carrier to the role of carrier's carrier could simplify the task of the regulatory authorities, at least in so far as the problems of cross-subsidy and other forms of anticompetitive conduct are concerned, there are

reasons for questioning whether it would allow society to realize the full benefits of competition. In economic terms, such a constraint on the role and potential contribution of the dominant carrier may not be as efficient or desirable a policy alternative as one which would permit the firm to participate as a vigorous competitor, and make its full contribution toward achieving the efficiency and innovative potentials inherent in rapidly evolving telecommunications technologies. This presumes, of course, that a way can be found to ensure full and fair competition, to prevent the dominant firm from overrunning competitive markets solely on the basis of its monopoly power and not its efficiency.

Divestiture

Many observers of the telecommunications industry seem to prefer a more positive and pro-competitive approach to the problem of monopoly power than one which consists, essentially, of excluding the dominant carrier from providing anything but basic transmission services. Their alternative is often divestiture, that is a restructuring of the carrier involving the spin-off of selected aspects of its operations into fully independent and competitive entities.

The United States Department of Justice is presently engaged in an antitrust action against AT&T which alleges attempts by the firm to monopolize the domestic telecommunications industry and which seeks the divestiture of various operations and associated assets of the firm. Because this matter is still in litigation, we have not addressed ourselves to this area and will refrain from comment on the issues involved.

SEPARATE SUBSIDIARIES AS
REGULATORY AND POLICY TOOLS

The use of the separate subsidiary device--essentially a corporate organizational form--as a means for accomplishing regulatory purposes and achieving public policy goals is a relatively novel and untested concept. None of the parties we contacted--including FCC and Justice officials, as well as industry experts and officials of major telecommunication firms--were able to shed much light on the origins of the concept nor on the economic rationale for its application as a regulatory and public policy tool. A number of parties were skeptical about the efficacy of separate subsidiaries as a means of preventing abuse of monopoly power and had misgivings about relying on separate subsidiaries as the chosen instrument for promoting a public policy favoring competition in the provision of telecommunication products and services.

To appreciate the strengths and weaknesses of the separate subsidiary device as a pro-competitive regulatory tool, it is important to understand what separate subsidiaries can and cannot accomplish. First and foremost, the separate subsidiary requirement does not fundamentally alter the economic incentives of the firm on which it is applied. Second, a separate subsidiary

requirement, applied as a regulatory tool, is essentially nothing more than a complement to--really an extension of--accounting techniques which are aimed at identifying, allocating, and partitioning costs and revenues involved in providing various telecommunications products and services. Separate subsidiaries may enhance the visibility and auditability of intracorporate transactions, but they in no way eliminate the manifold difficulties and anticompetitive potential inherent in the allocation of joint and common costs. Finally, separate subsidiaries are not a panacea, a cure-all, or a self-sufficient solution to the problem of monopoly power and its abuse. Separate subsidiaries, because they solve little or nothing in themselves, imply a continuing and intensive regulatory effort, including a heavy reliance on the very cost allocation, accounting, and auditing techniques which have proven so troublesome, difficult, and inadequate in the past in their application to traditional rate of return/rate base regulation and as a means of preventing cross-subsidization of competitive offerings.

Separate subsidiaries do not alter corporate incentives

Imposing a separate subsidiary requirement on a dominant firm does little or nothing to alter the incentives of the overall firm or make the incentives of the separate subsidiary significantly different from those of the corporate parent. This is so because a separate subsidiary requirement in itself does not alter the links of ownership and control which result in the separate subsidiary's subordination to and identification with overall corporate goals and strategy. The governing incentive of the separate subsidiary will be to maximize the profitability of the overall firm and to serve as an instrument of corporate policy in pursuit of this objective.

A separate subsidiary merely serves the function of drawing a line of demarcation, a boundary between the parent and its affiliate. With its provision for separate books of account and records, it provides a means of tracing transactions between the two--something to look at, investigate, and audit.

FCC has clearly recognized the limitations of the separate subsidiary in this respect. In the final decision in its Computer II proceeding, for example, the Commission acknowledges that:

> "A separate subsidiary requirement, from a purely structural perspective, does not guarantee a competitive marketplace because it does not significantly change the incentives of a firm upon which it is imposed. The requirement does not impart an incentive to operate the subsidiary in a manner that would detract from the overall profitability of the parent corporation. Thus, in general, if

the parent has an incentive to exercise its market power to the disadvantage of consumers and competitors in the absence of a separate subsidiary, it has the same incentive to do so after one is required."

What FCC sees as a "limitation" inherent in the separate subsidiary approach, others perceive as a fatal flaw. For example, one economist, who is also a specialist in telecommunications regulatory matters, has characterized the separate subsidiary approach as a

"* * * half-solution [which] fails to address, much less resolve, the economic incentives associated with horizontal and vertical market structure. Beset by built-in conflicts of interest, the separate subsidiary approach is a policy snare and delusion."

In connection with proposed legislation providing for the use of the separate subsidiary device as a safeguard against the anticompetitive effect of allowing the dominant carrier to engage in competitive offerings an antitrust expert testifying in September 1980 before the Subcommittee on Monopolies and Commercial Law, House Committee on the Judiciary 1/ commented that the separate subsidiary:

"* * * is an ineffective safeguard, * * * a fiction, a contradiction in terms. If it were fully-separated it would not be a subsidiary. But it clearly will not be fully-separated, despite provisions against interlocking directors and officers."

Finally, the Department of Justice has observed in connection with FCC's proposed reliance on separate subsidiaries to prevent anticompetitive behavior that:

"It is clear * * * that the separate subsidiaries concept is likely to have a de minimis impact on removing incentives to the exercise of market power * * *. [t]he principle that 'separate' entities operating under the same corporate umbrella are unlikely to prevent anti-competitive consequences has long been recognized by antitrust courts. In like manner, here, a separate subsidiary with separate officers, personnel and books of account is unlikely to deter anticompetitive potentials."

1/Hearings Before the Subcommittee on Monopolies and Commercial Law of the House Committee on the Judiciary, 96th Cong., 2d Sess. on H.R. 6121, Sept. 9 and 16, 1980, serial no. 69, p. 378.

Separate subsidiaries are essentially an accounting device

The fact that separate subsidiaries constitute essentially an accounting safeguard rather than a definitive structural solution to the problem of monopoly power is acknowledged by the Commission in its final decision in Computer II. The Commission, in recognizing that the separate subsidiary requirement does not alter incentives, maintains, nevertheless, that it reduces the ability of the firm on which it is imposed to engage in predation or to do so without detection. This is accomplished, the Commission states, through reduction of joint and common costs between affiliated entities, the requirement that transactions move from one set of corporate books to another, and the publication of rates, terms, and conditions on which services will be available to all potential purchasers.

The separate subsidiary requirement is thus intended to separate and segregate costs associated with producing particular products and services while at the same time providing visibility, accountability, and auditability for intracorporate transactions. In this sense, as the Chief of the Commission's Office of Plans and Policy has observed, accounting and separate subsidiaries are complements and not substitutes for one another. In fact, in a very real sense, separate subsidiaries are really nothing more than an extension of accounting, a means of illuminating and subjecting to public scrutiny a vast array of corporate decisions and actions relating to such items as transfer and valuation of assets, cost allocations, pricing of intracorporate transfers and transactions, pricing of product and service offerings, and distribution of revenues.

Structural separation requirements, as well as requirements of arm's length dealings and fully compensatory transfer pricing between corporate affiliates are clearly regulatory requirements. Just as clearly, imposition of such requirements presupposes the imposition of still other requirements--notably costing principles and methodologies and accounting procedures--which make it possible to detect and prevent cross-subsidy and to ensure, where appropriate, that intracorporate transactions take place on a fully compensatory, arm's length basis.

Because costing methodologies and accounting tools are so crucial to the workability of an approach which, by general agreement, does not significantly alter incentives to engage in anticompetitive conduct, these tools must be fully developed and implemented before a separate subsidiary approach is made operational. Otherwise, there will simply be no way to adequately assure that separation is accomplishing the pro-competitive, public interest purposes for which it is intended.

Chapter 4 discussed in detail the Commission's efforts to date to develop a satisfactory and feasible methodology for allocating joint and common costs. Because separate subsidiaries do

not totally eliminate joint and common costs, resolution of the costing problems outlined in that chapter will have to precede full implementation of separate subsidiary operations. Moreover, since traditionally regulated basic services will presumably continue to experience ever increasing competitive incursions, it will be equally essential to have costing methodologies which can protect against interservice cross-subsidy and predatory pricing in the basic interexchange services sector.

Just as it will be necessary to resolve longstanding costing problems before moving ahead with separate subsidiaries, it will be essential to have in place fully developed cost accounting for all affiliated corporate entities to ensure that intracorporate transfer prices are fully cost compensatory in nature. Without such cost accounting, the need for which is discussed in detail in chapter 5, the Commission will not be able to make valid comparisons of prices and costs. It will also not be able to maintain proper surveillance between corporate entities, particularly between the traditionally regulated monopoly sector and the deregulated, competitive (enhanced services, customer premises equipment) sector. 1/

Along with detailed cost accounting, there will be a need for audits. Without audits, FCC will be compelled to rely, as it has so often in the past, on the word of the carrier for the accuracy and reasonableness of the accounts, data, and reports. The problems posed by FCC's reliance on unaudited carrier data are discussed in chapter 3 in connection with an evaluation of the agency's traditional price/earnings regulatory activities.

As can be readily seen, separate subsidiaries do not represent a quantum leap in FCC's ability to prevent and detect cross-subsidy or to mitigate the risk of anticompetitive actions. Regulatory authorities will still be obliged to deal with highly subjective, complex, and troublesome problems of cost allocation. They will still need to ensure that a vast array of intracorporate transactions as well as external product and service offerings are priced in a fully cost compensatory manner. They will still be relying, in short, on those techniques which have proven difficult to apply effectively in the past and imperfect as safeguards against anticompetitive behavior. In this regard, the former chief of FCC's Common Carrier Bureau during congressional testimony in late 1979 stated:

> "* * * I don't wish to appear too negative about this, but I do think that there should be a clear understanding at least of my perceptions of the question of separate subsidiaries and accounting. [The question was asked] could someone guarantee

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1/We recognize that private and governmental enforcement of antitrust laws will also aid in deterring anticompetitive practices.

that there wouldn't be cross subsidies employing these kinds of tools, and the answer is no. We can't guarantee that there won't be cross subsidies * * * Accounting is really not a science, at least in this area it is not a science, and there are going to be difficult questions of cost allocations where there are joint and common costs involved, and maybe sometimes even when it is not so clear that they are involved * * *.

In addition, where goods and services are transferred back and forth between and among affiliated entities, really, no matter what the degree of separation, there is a possibility for the manipulation of transfer prices. * * *

So, while separate subsidiaries are helpful and accounting systems are helpful in terms of trying to expose a little better anticompetitive practices, it would be, I think, a serious misunderstanding to believe that these devices would really resolve all our problems. * * *

[Absent divestiture or its functional equivalent] I don't have a good deal of faith that problems associated with the manipulation of transfer prices or arguments about cost allocations are going to be resolved." 1/

Separate subsidiaries presuppose intensive regulatory involvement

Given the present lack of truly workable competition in most sectors of the telecommunications industry and the salient features of the separate subsidiary approach, that is, it does not alter the firm's incentives and relies heavily on accounting techniques to highlight opportunities for abuse of market power--one can only conclude that reliance on the separate subsidiary approach presupposes continuing intensive involvement of the regulatory authorities. This is a conclusion of utmost importance for those who might be tempted to conclude that the present state of competitive development in various sectors of the industry constitutes a justification for withdrawing regulatory safeguards and entrusting these markets to the self-regulating, "invisible hand" of competition. Clearly, deregulation, in the sense of using separate subsidiaries and associated structural conditions and competitive safeguards as an alternative to traditional price/earnings type regulation, does not mean the absence of regulation.

1/Transcript of unpublished testimony by Phillip Verveer, Chief, Common Carrier Bureau, FCC, before the Subcommittee on Communications, House Committee on Interstate and Foreign Commerce, Nov. 8, 1979.

To have any confidence at all in separate subsidiaries as a means of promoting and protecting emerging competition, we believe that FCC will have to have a direct involvement in specifying the form and number of separate subsidiaries as well as the products and services that will be offered by these subsidiaires. The agency, we believe, will need to prescibe a variety of conditions and competitive safeguards to be imposed on the operation of the separate subsidiaries as well as on their dealings with other corporate affiliates and with competing entities. FCC will need to prescribe and oversee the development of the accounting and reporting systems that will be relied on to provide the "visibility" and "auditability" which are the hallmarks of this approach and its primary deterrents to abuse of market power. It will need to oversee and approve the valuation of assets transferred to the separate subsidiary(ies) as well as the initial capitalization and subsequent financing of the subsidiaries.

Once the separate subsidiaries are operational, FCC will have to monitor, on a continuing basis, the competitive state and performance of the markets. It will need to (1) police compliance with the various conditions, prescriptions, and prohibitions which it has imposed on separate subsidiary arrangements, (2) respond to and investigate complaints of anticompetitive conduct, and (3) on its own initiative, scrutinize transactions between and among affiliated entities to ensure where required that they are fully cost compensatory and made on an arm's length basis.

MAXIMAL SEPARATION IS NEEDED FOR SUCCESSFUL USE OF THE SEPARATE SUBSIDIARY APPROACH

If separate subsidiaries are to be relied on for protecting and promoting competition and if the regulatory tasks implicit in this approach are to be kept within realistic and feasible bounds, it will be necessary, we believe, to fashion structural separation conditions and competitive safeguards in such a way as to make it as difficult as possible to abuse market power and at the same time as easy as possible for FCC to fulfill its regulatory responsibilities. What is needed is a set of structural requirements, conditions, and prohibitions which will severely constrain the firm's ability to act on anticompetitive incentives and at the same time minimize the need for repeated ad hoc regulatory determinations and detailed, day-to-day regulatory oversight and intervention.

What we have in mind here is an approach more closely approximating true "maximal separation." Such an approach involves identifying the sources of market power as well as the principal opportunities for its abuse and fashioning appropriate structural arrangements and safeguards to limit the potential for anticompetitive actions. Through such an approach, FCC can segment and partition the dominant carrier's operations to (1) minimize joint and common costs, (2) contribute a high degree of visibility and auditability to transactions which take place between and among

affiliated entities, and (3) erect fairly impervious barriers to anticompetitive cross-subsidy and other forms of abuse of market power.

Maximal separation stands in marked contrast to the limited, and, in our view, inadequate separation provided for in FCC's Computer II proceeding. Key FCC officials we consulted during our review acknowledged that the structural separation conditions and competitive safeguards provided for in Computer II are minimal by any standard and were formulated as much or more with an eye to what would be acceptable to a Commission divided on the question of need for any structural separation at all, than to what is essential to ensure full, fair, and effective competition. Repeatedly, we were told that the chief obstacle to stronger separation requirements and competitive safeguards was the lack of support on the Commission for more stringent separation and, in some cases, a lack of conviction that any separation is necessary.

We believe that maximal separation constitutes an appropriate quid pro quo for relaxation of regulatory entry barriers and traditional rate of return/rate base regulation insofar as the dominant carrier's participation in competitive product and enhanced service offerings is concerned. 1/

In addition to successfully implement its chosen approach to the regulation of competitive offerings, the Commission and its

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1/It might be argued that in imposing separation conditions and other procompetitive safeguards there is a cost imposed at the same time, chiefly through sacrificing certain scale economies attributable to the vertical integration of a firm. Much has been said about such economies in a general sense but relatively little work has been done to document and quantify them in specific terms. Almost every firm is characterized both by scale economies and scale diseconomies in its operations. Any net economies must be weighed against the alternatives of specialization economies and economies of technological change as assessed in light of the present and future characteristics of consumer demands.

FCC in its discussion of the benefits and costs of the structural approach mandated in Computer II cited an expectation of substantial public benefits from its chosen approach for encouraging the growth and vitality of a competitive telecommunications industry. At the same time it concluded that the costs to the firm subjected to separation requirements as well as to the public in terms of any negative impact on innovation would not be significant. A requirement of separation or prohibition of sharing discussed in this chapter could be reconsidered if specific evidence is developed which demonstrates that the costs imposed are likely to outweigh the procompetitive benefits which may be procured by such a requirement.

staff will need to devote far more attention than has been the case to date to the resource and organizational requirements implicit in using the separate subsidiary regulatory scheme. This includes needs in regard to the size and organization of staff; the specific analytical, monitoring, enforcement, and other functions that will need to be performed; the mix of skills, experience, and training that will be required; and the types of support systems and facilities (e.g., record and report filings and electronic data processing equipment) which will be needed to carry out the Commission's regulatory tasks.

Implementing the Computer II approach is a matter that has received little attention by the Commission. At the time of completion of our review only three individuals were assigned full-time to the Computer II Implementation Task Force. Many senior Commission staff who had key roles in developing the Computer II approach have since left the Commission, including the chief of the Common Carrier Bureau. Without more attention devoted to matters basic to implementation it is extremely doubtful that Computer II can--or, for that matter, should be allowed to--go into effect on March 1, 1982, as presently scheduled.

The need to attend to these important matters is underscored by FCC's apparent intention, as illustrated by its April 1981 Cellular Land Mobile Decision (Docket 79-318) to make broad use of the separate subsidiary device in the future.

FCC's COMPUTER II DECISION FALLS SHORT OF MAXIMAL SEPARATION NEEDED TO PROTECT AND ENCOURAGE COMPETITION

FCC's Computer II Decision, although it refers repeatedly to the concept of "maximum separation" first enunciated by the Commission in the Computer I Inquiry, falls short of maximal structural separation in our view, in several important respects. The inadequacies of the separation required by FCC relate primarily to the allowable grouping of activities within the deregulated separate subsidiary prescribed for competitive offerings and the degree of separation required for such important and basic functions as research and development and manufacturing.

A single conglomerate subsidiary versus multiple, stand alone subsidiaries

FCC's Computer II Decision allows, but does not require, more than one separate subsidiary for a carrier's deregulated competitive offerings, that is, it would allow the dominant carrier to provide both enhanced services and customer premises equipment through a single, conglomerate subsidiary. Such a subsidiary would be endowed from the moment of its creation with massive size, pervasive dominance, and a significant potential for abuse of market power. In recent testimony before the U.S. District Court for the District of New Jersey, where it

is attempting to secure a definitive construction of the 1956 Consent Decree to be able to fully implement the deregulatory scheme envisioned in the Computer II rulemaking, AT&T testified that it has already initiated a massive corporate restructuring in line with the Computer II decision. This will entail transferring between $10 and $15 billion of its assets and about 100,000 employees to a new separate subsidiary.

Because of the fledging character of much of the competition in this industry and the ability of a single conglomerate subsidiary to practice internal cross-subsidy and to selectively target particular markets for anticompetitive actions, we believe that the Commission should have focused more attention on the potential for cross-subsidy, predatory pricing and other abuse inherent in a single conglomerate subsidiary and should have explicitly provided for structural separation of deregulated competitive offerings in such a way to reduce the potential for anticompetitive abuse.

One of the more obvious possibilities for structural separation would involve creating at least two fully separated subsidiaries, one for enhanced service offerings and another for competitive terminal equipment offerings. Each subsidiary, in addition to having its own directors, officers, employees, facilities, books of account and recordkeeping would perform the majority of its own operating and administrative functions. Such minimal administrative and other services as the separate subsidiaries might be permitted to secure from the parent firm or from other corporate affiliates would be provided on a fully cost compensatory, fully auditable, arm's length basis.

Structural separation along these or similar lines would go far, we believe, in reducing the potential for predatory pricing and a number of other potential abuses of market power. It would also greatly facilitate FCC's tasks of fostering workably competitive telecommunications product and service markets as well as monitoring competitive performance in deregulated markets.

Separation of research and development and manufacturing

In its final decision in Computer II and again upon completion of Reconsideration, the Commission determined to permit the sharing of research and development as well as manufacturing by the parent corporation and its competitive separate subsidiary(ies). In the final decision the Commission also announced its intention to examine the dominant carrier's license contract arrangement through which monopoly derived revenues are used to fund research and development as well as "other issues generic to the use of monopoly revenues to support competitive research and development." It indicated that at the conclusion of its inquiry

it would feel free to modify its treatment of research and development as the facts might warrant. 1/

The dominant carrier argued against imposing unnecessary regulatory constraints on the separate subsidiary which would prevent it from competing fairly and effectively. Separation of its research and development and manufacturing, the dominant carrier argued, would have the effect of handicapping any separate subsidiary as a provider of enhanced services and customer premises equipment competing with large domestic and foreign firms. Moreover, it argued that preventing the separate subsidiary from using the dominant carrier's research and development and manufacturing capabilities would deny customers of enhanced services and customer premises equipment the benefits of integrated research and development and manufacturing, resulting in inefficient fragmentation and duplication.

Numerous other parties offering comments in the Computer II proceeding commented on the, as they saw it, inadequate separation and competitive safeguards provided by the Commission regarding research and development and manufacturing. They pointed out that these areas are of enormous importance to provision of enhanced telecommunications services and innovative terminal equipment offerings and also that they have an inherent potential for significant anticompetitive abuse of market power. Chief among the potential abuses cited were cross-subsidy and anticompetitive transfers of information.

Many commenters stated that the Commission's failure to require complete separation of research and development as well as manufacturing was inconsistent with the principle of maximum separation which it had espoused, as well as with the goal of promoting competition in the provision of telecommunications products and services. A number of parties observed that the alleged benefits of a vertically integrated structure were not at issue in the proceeding, since the separate subsidiary would be free, in any event, to develop its own vertically integrated structure with its own research and development and manufacturing capabilities.

We agree with those who maintain that adoption of a procompetitive policy coupled with reliance on the separate subsidiary device to assure full and fair competition requires maximal

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1/A Notice of Inquiry in this matter was adopted by the Commission on November 25, 1980, and a document released February 6, 1981. Comments were due by June 22, 1981, and reply comments by August 10, 1981. Bureau staff have begun the task of summarizing and analyzing the comments received.

separation of applied research and development 1/ and manufacturing activities. Otherwise, in our opinion, the risks of cross-subsidy and other forms of anticompetitive behavior are unacceptably great. We note that the Commission itself has stated, regarding the policy of maximum separation, that

> "* * * separation is appropriate in those cases in which there is a substantial threat of injury to the communications ratepayer and where other regulatory tools would not suffice."

Such is clearly the case, we believe, regarding research and development and manufacturing.

In dealing with the arguments surrounding the issue of vertical integration, the Commission has observed that

> "* * * the record with respect to the importance of vertical integration on innovation is ambiguous. But it is clear that the benefits of vertical integration are less in the specialized discrete areas of enhanced services and CPE than in the design and operation of a unified, integrated facility offering basic services."

Whatever the benefits of vertical integration, they would continue to be available to a fully separated, stand-alone subsidiary which satisfied the bulk of its own research and development and manufacturing needs as the Commission itself has acknowledged. Thus, using the example above, a separate CPE subsidiary could be required to perform its own research and development as well as manufacturing. Similarly, an enhanced services separate subsidiary could be required to satisfy its own research and development requirements, as well as requirements for computer software and hardware. Integrating these capabilities into the separate subsidiaries would significantly reduce the potential for anticompetitive allocation of joint and common costs and would result in the separate subsidiaries functioning as virtually autonomous, fully integrated providers of competitive service and equipment offerings.

The final consideration which leads us to conclude that full separation of research and development and manufacturing is appropriate has to do with regulatory efficiency and effectiveness. As we have noted elsewhere, the existence of activities shared between regulated and unregulated sectors implies the potential for misallocation of joint and common costs and a consequent need for continuing regulatory oversight to ensure that

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1/Applied research and development being that which is product and enhanced service specific.

abuses do not take place. This implies, in turn, the scrutinizing of transactions, contracts, and accounting data to ensure that transfer prices are fully compensatory, that transactions occur on an arm's length basis, and that various anticompetitive practices are not engaged in.

The Commission has said in its final decision that it will permit the sharing of research and development by the parent corporation with its separate subsidiary, provided such exchanges take place on a completely cost compensatory basis. However, as the Commission itself acknowledges:

> "This assumes appropriate records of account are established for research and development * * *. Such exchanges must be monitored, and if it is determined that research and development is being performed for the subsidiary on less than a [sic] compensatory basis, further exchanges will be prohibited."

Elsewhere, regarding manufacturing, the Commission states that the separate subsidiary will be required to deal at arm's length with any affiliated manufacturing entity.

> "The transfer of any products between this CPE/enhanced service provider and any affiliated equipment manufacturer must be done at a price that is compensatory. To police this requirement we will require that any transaction between the enhanced services subsidiary and any other affiliate which involves the transfer (either directly or by accounting or other record entries) of money, personnel, resources or other assets be recorded in auditable form. Moreover, any contract entered into between such entities must be filed with the Commission, where it will be made available for public inspection * * * We will monitor these contracts and, should abuses be discovered, we will re-examine our determination with regard to the appropriate degree of separation."

Simply stated, we do not believe that FCC is now equipped, or is likely soon to be equipped, to undertake a continuing regulatory task of this magnitude and complexity. Apart from the resource-intensive nature of the task and the question of resource availability, there is the problem of data availability and the well-documented record of FCC's difficulties (e.g., in Docket 19129) in dealing with precisely these kinds of questions. 1/ FCC has never required the kinds of accounting procedures and accounting records for the dominant carrier's

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1/FCC's problems in implementing Docket 19129 are discussed in chapter 3, and obtaining reliable and appropriately detailed cost data are discussed in chapter 4.

manufacturing and research and development affiliates which are needed to monitor cost allocations within these affiliates as between products and services they provide to the carrier's regulated entities. As a result, the Commission has never been in a position to ensure against cross-subsidy in these important areas. As the Commission itself admits:

> "* * * standard accounting procedures presently in use in the regulated telecommunications industry may not be sufficient to insure the compensatory nature of such intracorporate transactions where neither party is a regulated common carrier, but potential burdens on the communications ratepayer still exists. In such circumstances, it may be necessary to require the creation of additional accounting records to enable us to monitor more accurately the cost allocations within the manufacturing or research affiliates."

Separate from the question of FCC's ability to effectively police the minimal separation requirements which it proposes in the areas of research and development and manufacturing, is the question of the wisdom of committing significant regulatory resources to such a task when a simpler, more straightforward alternative is available. Although the cost and difficulty of regulatory tasks do not in themselves constitute sufficient arguments against performing them when they are deemed essential to protect the public interest--and no less costly alternative is available--that does not seem to be the case here. No demonstration has been made that separate subsidiaries would suffer significant loss of efficiency or competitiveness under a requirement of full separation of applied research and development and manufacturing. In fact, as already noted, to the extent that there are benefits to be derived from vertical integration, these would be achievable within a vertically integrated separate subsidiary. Moreover, full and complete separation with appropriate costing and accounting safeguards would provide a far more effective protection against cross-subsidy and other anticompetitive abuse of market power. It would seem that the logic of FCC's adopted approach compels this separation.

SPECIFIC CONDITIONS, SEPARATION REQUIREMENTS, AND COMPETITIVE SAFEGUARDS

A policy of maximal separation, in addition to providing for structural separation of corporate activities and offerings in such a way to minimize the potential for anticompetitive allocation of joint and common costs, needs to provide for specific prohibitions, behavioral conditions, and competitive safeguards in areas where examination of market conditions and corporate practices has revealed a strong potential (i.e., an incentive and an opportunity) for anticompetitive abuse. The following discussion deals with areas where we believe the potential for abuse is particularly significant and where the safeguards proposed by

FCC in Computer II falls short of what we believe is required to protect and nurture emerging competition in the domestic telecommunications industry.

Separate directors, officers, and operating personnel

In the final decision in Computer II, FCC required that separate subsidiaries established for competitive offerings have separate officers as well as separate operating personnel. Separate officers were felt to be necessary to reduce the anticompetitive advantages that can accrue to the separate subsidiary through privileged access to information, chiefly customer proprietary information, which results from the parent corporation's common carrier activities. Separate operating personnel were required to reduce the anticompetitive potential for misallocation of joint and common costs inherent in the shared performance of such operating functions as marketing, maintenance, installation, and training.

We agree with these separation requirements regarding officers and operating personnel. At the same time, we would go even further and require also that a separate subsidiary have its own board of directors. While we have no illusions concerning the added degree of independence which this requirement will achieve, we believe that a requirement of separate directors would underline and reinforce the stand-alone, separated character of the subsidiary and provide an additional measure of protection against anticompetitive abuse of the relationship between the parent firm and its fully separated affiliate. Additionally, as discussed on page 128, we believe that an initial requirement of separate directors will make it easier and more credible for the Commission to impose later, should it deem this appropriate, a requirement of independent equity participation in the separate subsidiary(ies).

Restrictions on joint use of physical space or property

In its final decision, the Commission concluded that a subsidiary offering enhanced services should be precluded from using in common any leased or owned physical space or property with an affiliated carrier on which is located transmission equipment or facilities used in the provision of basic transmission services. The reasons given by the Commission for this restriction related to the need to ensure nondiscriminatory access to the dominant carrier's basic transmission services and the need to minimize "the inherently difficult problems associated with the allocation of joint and common costs."

In its reconsideration of Computer II, the Commission broadened its separation requirements with respect to sharing of physical space, stating that the sharing of space should be confined to that used for joint administrative services; namely,

accounting, auditing, legal services, personnel recruitment and management, finance, tax, insurance, and pension services.

We agree with the Commission's determinations concerning the need for stringent restrictions on shared use of physical space and co-location of activities. Such separation is consistent with the maximal separation policy and its corollary, minimization of joint and common costs, which we believe are essential for successful use of the separate subsidiary approach. We believe that such restrictions are appropriate for all separate subsidiaries (not just an enhanced services separate subsidiary) that might be required by FCC.

Beyond the obvious risks inherent in the existence and allocation of joint and common costs (namely, cross-subsidy), we believe that a significant potential for other forms of anticompetitive abuse exists in the shared use of physical space and the co-location of such important functions as marketing, research and development, and manufacturing. These anticompetitive dangers, including tying 1/ and misuse of inside information, have been fully and, we believe, convincingly discussed in comments received by FCC in Computer II, as well as in congressional hearings dealing with use of the separate subsidiary device.

Marketing

Consistent with an "essential thrust" of its separate subsidiary approach, that is, to separate joint and common costs associated with the provision of regulated and unregulated 2/ activities, the Commision in its final decision required that deregulated separate subsidiaries perform their own marketing (including all advertising) related to services and equipment offered by them. The Commission concluded that the potential for misallocation of costs and anticompetitive behavior in joint marketing is great and that, as a result, effective regulation requires eliminating the risks by prohibiting joint marketing activities. The Commission also concluded that a separate subsidiary which offers customer premises equipment and enhanced services may not market any other equipment, such as transmission

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1/Under a tying contract arrangement the purchaser of an article or service agrees, as a condition of purchase, to buy the seller's supplies of some other commodity or service. The agreement in effect forecloses competing vendors from the opportunity of selling the "tied" item to that purchaser.

2/The words "unregulated" and "deregulated" do not mean in this context the absence of any form of regulation, rather they mean the absence of title II type price/earnings regulation. The separate subsidiary approach is itself considered to be an alternative form of regulation by the Commission.

or other network equipment, because of the risk that the communications ratepayer may have to bear the cost of noncompensatory intracorporate transfer pricing that may inure to the benefit of the separate subsidiary(ies).

In its Reconsideration of Computer II, the Commission retained the separate marketing requirement for separate subsidiaries, with a few modifications. The Commission dealt with objections concerning the prohibition against separate subsidiary marketing of network equipment by discussing the incentives of vertically integrated, rate of return regulated dominant firms. It pointed out that firms subject to price/earnings regulation have an incentive to transfer costs to regulated activities and profits to nonregulated activities. As a result, if separate subsidiaries were permitted to market transmission and other network equipment to affiliated entities the incentive to cross-subsidize could be acted upon by having the separate subsidiary serve as a conduit for cross-subsidy, buying equipment from the company's manufacturing affiliate and marking up the equipment for sale to the operating companies.

To accommodate the dominant carrier's objections to FCC's proposed marketing restrictions and at the same time guard against the problem of cross-subsidy, the Commission modified its proscription against subsidiary marketing of network equipment to the extent of merely restricting affiliated entities from acquiring such equipment from the separate subsidiary if the equipment is not manufactured by the subsidiary. The separate subsidiary would otherwise be free to market network equipment acquired from the company's manufacturing affiliate to any nonaffiliated entities. Such a modification, the Commission felt "more appropriately guards against the potential injury to the ratepayer."

Separating the marketing of competitive terminal equipment offerings from the present marketing of network equipment used in providing basic transmission services provides a relatively clear boundary. Without this boundary the joint marketing of competitive terminal equipment and traditional network equipment would introduce the possibility of anticompetitive abuse, including cross-subsidy (e.g., the misallocation of marketing expenses as between terminal equipment and network equipment) and anticompetitive tying arrangements. Moreover, we are concerned by the precedential significance of such a modification 1/ as well as by comments made by the Commission in connection with this change. For example, the Commission has taken the position that:

> "* * * our concerns are limited to the potential impact on the communications ratepayer from intracorporate transfer pricing" and, that "absent practices which

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1/Particularly the potential for relaxation of other conditions, safeguards and separation requirements through possible granting of waiver requests.

adversely affect communications consumers, anticompetitive concerns should be left to the antitrust authorities and the antitrust laws. Where the factual premise of harm to communications customers can be established, however, we would continue to exercise our jurisdiction in aid of the goals of the Communications Act."

We believe that the Commission's own finding that competition in the provision of telecommunications services and products is in the public interest and that competition, as a consequence, should be encouraged and protected, dictates a more affirmative and actively procompetitive posture with respect to marketing than that reflected in the Commission's statements. This is particularly true, we believe, in view of the significant role assigned to the Commission in advancing the public policy objectives embedded in the Nation's antitrust laws. 1/ A retreat from the principle of separation of marketing implies greater regulatory vigilance and regulatory resources and opens the door to potential anticompetitive abuse.

Joint institutional advertising

In its final decision in Computer II and again on Reconsideration the Commission determined that separate subsidiaries providing competitive offerings should be required to do their own advertising for specific products and services. This condition is obviously aimed at avoiding cross-subsidization of competitive product and service promotional efforts through shifting of costs to monopoly ratepayers and is clearly required in our view. The Commission decided at the same time, however, to permit joint institutional advertising, that is, advertising which is not product or service specific. "There is no harm to the communications ratepayer" argues the Commission, "in letting the parent take advantage of its good will."

As we have discussed elsewhere, and as the Commission has itself acknowledged, the existence of any joint and common costs involved in the provision of both monopoly and competitive offerings provides the incentive and opportunity for the firm to misallocate the costs of competitive offerings to the regulated monopoly sector. This, in turn, imposes a burden on the regulatory authorities to scrutinize cost allocations to ensure that they are appropriate and not anticompetitive. We believe that the Commission would be hardpressed to determine whether allocations of joint costs of "institutional advertising" between the parent (or other affiliate) and separate subsidiary were being made fairly and appropriately.

1/In AT&T Co. v. F.C.C., No. 77-1254 (D.C. Cir., filed March 7, 1980), the court discussed in detail the antitrust enforcement responsibilities of the FCC.

Beyond this lies the larger question of whether permitting joint institutional advertising constitutes the most procompetitive approach the Commission might take. Since the dominant carrier is virtually a monopoly supplier of basic telecommunications services, there is little benefit to be derived from the standpoint of monopoly sector services in engaging in joint institutional advertising. Rather, the benefits are to be found largely in the promotion of competitive product and service offerings and of the notion that a potential customer's entire range of communications needs can be optimally satisfied by a single supplier of both monopoly and competitive services. In our view, adoption of an approach aimed at promoting the development of competition wherever feasible in providing telecommunications goods and services dictates the need for the Commission to monitor the application of institutional advertising. Should the appearance of anticompetitive behavior occur, the Commission would then need to place additional restrictions on or ban joint institutional advertising.

Rotation of management and operating personnel

Although the Computer II Decision prohibits the sharing of officers and key operating personnel by the parent firm and its separate subsidiary(ies), nowhere in the final decision nor in its Reconsideration of Computer II does the Commission deal with the question of the rotation of management and operating personnel between and among separate subsidiaries and other corporate affiliates. In our view, this is an important question and one which must be fully explored in terms of its significance to the overall firm, its anticompetitive potential and its possible impact on other separation requirements that have been imposed.

The rotation of management and operating personnel among various entities of a firm is a legitimate and reasonable method of satisfying and adjusting staffing needs as well as developing management cadres with breadth and depth of experience in the corporation's diverse operations. At the same time, however, it should be immediately apparent how this practice, when applied to deregulated separate subsidiaries, could offer the potential for cross-subsidy and other forms of anticompetitive abuse, as well as militate against the effectiveness of other separation conditions and competitive safeguards which have been imposed. For example, without restriction or continuing scrutiny by FCC, transfers of personnel (officers, managers, engineers, marketing personnel) could serve as a vehicle for the anticompetitive flow of information (e.g., research and development data, advance network technical and planning information, customer proprietary information) from the corporate parent and its affiliates to the competitive separate subsidiary(ies). Similarly, without some control or safeguard, it would be possible for the hiring and training of personnel ultimately intended for a separate subsidiary to be performed by other corporate affiliates prior to the transfer of such

personnel to their intended positions in the competitive entity. 1/ In such an event, the cost of recruiting, hiring, and training would be unfairly borne by monopoly ratepayers rather than reflected in the prices paid for competitive product and service offerings.

While it would be unnecessary and unfair to impose a total prohibition on the transfer of employees to and from, as well as between, separate subsidiaries, we believe that the FCC should thoroughly and systematically examine the implications of personnel rotation between regulated and deregulated corporate entities, attempt to identify and evaluate the opportunities for anticompetitive abuse inherent in this practice and then formulate appropriate restrictions and safeguards to militate against such abuse. It may, for example, be appropriate to limit the number and frequency of transfers. It may also be desirable to impose some restrictions on the use of transferred personnel. For example, a marketing/sales person transferred into the separate subsidiary from another corporate affiliate might be prohibited for a specified period of time from contacting or dealing with previous monopoly service customers.

Prohibition against construction, ownership or operation of transmission facilities by deregulated separate subsidiaries

In the final decision in Computer II (77 FCC 2d 384(1980)) the Commission imposed a prohibition on the construction, ownership, and operation of transmission facilities by the deregulated enhanced services subsidiaries of dominant carriers. The Commission determined that such a restriction was essential to preservation of the resale structure, to curb the abuse of market power and to assure the continued availability and improvement of basic telecommunications facilities and services. As the Commission put it:

> "The thrust of applying the resale structure * * * is to establish a structure under which common carrier transmission facilities are offered * * * to all providers of enhanced services (including [the dominant carrier's] own enhanced subsidiary) on an equal basis. Inherent in the resale structure is the fact that the separate corporate entity may not construct, own, or operate its own transmission facilities. In essence, the resale subsidiary must acquire all its transmission capacity from an underlying carrier pursuant

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1/In its Reconsideration of Computer II the Commission makes clear that the parent firm and its fully separate subsidiary(ies) will be permitted to share personnel recruitment and management.

to tariff. This means that the same transmission facilities or capacity provided the subsidiary by the parent, must be made available to all enhanced service providers under the same terms and conditions. Requiring the subsidiary to acquire its transmission capacity from other sources pursuant to tariff provides a structural constraint on the potential for abuse of the parent's market power through controlling access to and use of the underlying transmission facilities in a discriminatory and anticompetitive manner.

"The separate subsidiary * * * also provides a structural mechanism for the separation of * * * regulated and nonregulated activities, thereby lessening the potential that the communications ratepayer will be subsidizing * * * unregulated ventures * * * the subsidiary may not provide basic transmission services for to do so would subject it to [title II] regulation and negate the structural separation of regulated and nonregulated activities."

The Commission went on to characterize as "an essential thrust" of the Computer II proceeding a desire to provide a mechanism whereby nondiscriminatory access to basic transmission services could be had by all enhanced service providers. Basic service, it pointed out, is the "building block" upon which enhanced services are constructed and offered. Thus, enhanced services are dependent on the common carrier offering of basic transmission services.

We strongly support retention of the resale structure and strict adherence to the ban on construction, ownership and operation of transmission facilities by deregulated separate subsidiaries. We note, however, that the Commission on Reconsideration has opened the door to the possibility of exceptions and abuse. For example, the Commission has said that

"* * * the subsidiary is not precluded from constructing transmission facilities for a third party, as long as the facilities are not owned and operated by the subsidiary."

Elsewhere, and of even greater significance, the Commission has provided for the possibility of granting a waiver of the transmission facility proscription to allow the subsidiary to own or operate its own transmission facilities in the event it should not be able to obtain adequate transmission capacity for a highly specialized service from its carrier affiliate or from another source.

As a number of parties commented during the Computer II proceeding, elimination of the ownership ban would frustrate the basic goal of the resale structure which is to assure that all persons are provided equal access to basic transmission facilities. In such an event, the separate subsidiary could engage in anticompetitive practices in the offering of essential facilities such as providing bundled offerings, refusing to interconnect, or denying service to specific competitive entities. Moreover, an elimination of the ban would provide the underlying carrier with incentives to overprice essential basic transmission facilities which would be used by competitors of its subsidiary but not by the subsidiary itself. In contrast, the requirement that a separate subsidiary not construct, own, or operate transmission facilities would provide positive incentives to the carrier to maintain sufficient transmission capacity to serve the needs of all users, including those of its separated enhanced services subsidiary.

Another paramount objective which is served by retention of the ban is that of assuring the continued maintenance and improvement of the dominant carrier's basic transmission network. Through retention of the ban, the benefits of any improvements introduced into the carrier's transmission facilities to accommodate the needs of its subsidiary would become available to all users of the underlying facility. In addition, the ownership proscription would provide an important incentive for the dominant carrier to continue to improve its common carrier facilities, and to assure an adequate supply of basic services compatible with enhanced service use. As numerous parties observed during the Computer II reconsideration, relaxation or elimination of the ownership ban could lead to a degradation of the basic network by providing an incentive for the dominant firm to shift its attention to the construction and improvement of basic network facilities in the competitive, deregulated subsidiary with the result that the basic network could become a least common denominator facility that would be inadequate as a foundation for sophisticated enhanced offerings.

The enhanced services subsidiary should be required, we believe, to take all of its basic transmission facilities under nonpreferential tariffs which are available equally to competing enhanced service providers. A firm line must be drawn in preserving the basic/enhanced service distinction to ensure the continued quality and availability of the underlying basic services and to prevent a circumvention of the competitive safeguards which the separate subsidiary arrangement is intended to provide. Such safeguards would, we believe, be compromised if either enhanced services were permitted to be offered in the basic network or if the enhanced services separate subsidiary were permitted to construct, own, and operate transmission facilities of its own.

We believe that a need for the exceptions provided for in the Commission's Reconsideration of Computer II has not been

established and, moreover, that they carry the grave risk of undermining the safeguards which the Commission itself has declared to be essential for promoting and protecting competition. With respect to the granting of waivers for ownership of transmission facilities by the separate subsidiary, for example, the Commission itself has said:

> "As to those contentions that the subsidiary must be able to construct its own transmission facilities if suitable facilities are not available, we would merely note that under this structure [i.e., resale structure] meeting the transmission needs of consumers and enhanced service vendors is the responsibility of the communications common carrier, not the enhanced service provider. The parent or carrier affiliated with the subsidiary has the option of seeking appropriate authorization to construct the requisite facilities. Indeed, the resale structure imposed here is premised upon the hope that it would encourage underlying carriers to have sufficient capacity, appropriately configured, to meet the needs of enhanced service firms without requiring our intervention * * *."

Financing and capitalization of separate subsidiaries

In the Final Decision in Computer II the Commission stated that one effective means of "deflecting" incentives to engage in anticompetitive conduct and to provide protection to the communications ratepayer is to require the infusion of some independent equity financing for the deregulated, separate subsidiary. Such a requirement, the Commission pointed out, would also invoke the additional safeguards afforded by the disclosure and other requirements of the Nation's securities laws. 1/

A requirement of outside equity participation is not without precedent in the Commission's regulatory proceedings. For example, in 1975, in connection with what was to become the Satellite Business Systems venture launched by International Business Machines Corp., the Communications Satellite Corp., and Aetna Casualty and Surety Co., FCC required a minority financial participation by a third party. The purpose of this requirement was to act on the competitive incentives of the major participants in the venture. Specifically, the Commission was concerned that International Business Machines and the Communications Satellite

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1/The organization, financing, and operations of separate subsidiaries would be subjected to greater public visibility and scrutiny as a result of a requirement of outside equity participation because such financing arrangements would subject the subsidiary to Securities and Exchange Commission securities and disclosure regulation.

Corp., because of their significant business ties with AT&T, might have reasons to limit or restrain their joint venture's competition with AT&T and other carriers in the specialized service market. It was felt that participation of another partner, not having such business ties, would alleviate concerns regarding the new venture's competitive posture and zeal and influence it toward pursuing FCC's policy objective that all domestic satellite systems be competitive to the greatest extent possible with AT&T and other carriers in the specialized service marketplace. 1/

Notwithstanding its recognition of the potential benefits of independent equity participation, the Commission determined not to impose such a requirement as one of the initial, basic Computer II conditions. The Commission observed in the final decision that the corporate and regulatory implications of outside financing had not been addressed in any significant detail during the Computer II proceeding and asserted that there was a need for further exploration of the underlying issues. The Commission expressed the view that it would be appropriate to wait until carriers subject to the separate subsidiary requirement (only AT&T as a result of reconsideration) had submitted their separate subsidiary capitalization plans for Commission approval before deciding what further action, if any, was warranted in this area.

Because of the potential benefits to be gained through a requirement of outside equity participation, we believe that this matter should receive the fullest and most careful consideration by FCC in connection with its intended review of the proposed structuring and capitalization of separate subsidiaries. At the same time, there should be ample opportunity for the public to participate in this important undertaking which, in addition to the question of outside financing, should deal with all aspects of the continuing financial relationship which will exist between the parent firm and its separated affiliates. Among the issues which need to be addressed are such questions as financing "cost" advantages of separate subsidiaries (the ability of a separate subsidiary to obtain financing in the capital markets at a lower cost than its competitors on the strength of the parent firm's credit rating), allocation of internally generated funds between regulated and unregulated activities (questions relating to appropriate limitations on the amount and duration of capital infusions to the competitive subsidiaries from the parent firm's monopoly earnings), and absorption of operating losses of separate subsidiaries by the parent should be explored.

The benefits of an independent equity participation requirement derive primarily, in our view, from the salutary impact which it could have on the incentives of a stand-alone separate subsidiary and from its contribution to facilitating regulatory oversight tasks of the Commission. The added visibility which

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1/ CML Decision, 51 FCC 2d 14(1975).

securities law disclosure requirements would impose on separate subsidiaries with publicly held securities, (disclosure of financial and operating information (15 U.S.C. Chapter 2A)), coupled with securities market evaluations of the potential and actual performance of the separate subsidiaries with publicly held securities, would facilitiate FCC's as well as competitors' monitoring of the separate subsidiaries' market conduct and provide needed benchmarks for measurement of competitive performance of fully separated entities.

STRUCTURAL SEPARATION OF INTEREXCHANGE AND LOCAL EXCHANGE AS A MEANS OF RESOLVING PROBLEMS OF ACCESS AND INTERCONNECTION

FCC's Computer II Decision provided for the creation of fully separated subsidiaries only for dominant carrier offerings of enhanced services and customer premises equipment. It did not provide for additional structural separation in other areas of the carrier's operations, even though the Commission's broad concern with promoting beneficial competition in the domestic common carrier industry, as well as preventing anticompetitive abuses, might well have led it to consider where additional separation and other competitive safeguards might be desirable. One area in which we and a number of other parties, including present and former FCC senior staff, believe additional structural separation could be beneficial has to do with separation of a carrier's long-distance (interexchange) transmission activities from its local exchange (intraexchange) operations. Structural separation and associated competitive safeguards could do much to prevent cross-subsidy and other anticompetitive abuse and ensure fair and equitable treatment in matters of access and interconnection.

Incentives of a dominant carrier possessing control over local bottleneck facilities

A dominant common carrier which also possesses substantial ownership and control of local distribution facilities (the local exchange loop) has the incentive and the opportunity to abuse its market power and act anticompetitively in matters of access and interconnection to these facilities. When a firm is both a bottleneck local exchange monopolist 1/ and a participant in other

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1/Local exchange service is a de facto monopoly. AT&T, the dominant firm as defined by FCC, owns or controls 23 operating companies which provide the bulk, over 84 percent, of local exchange services in this country. Bottleneck refers to the fact that most entrants into the terminal equipment, interexchange and enhanced services markets will have to deal--for the foreseeable future at least--with local exchange monopolists to offer service. The local exchange firms, in other words, have control over a bottleneck point in the other markets.

markets (particularly interexchange transmission services), two problems arise. The first is assuring the provision of nondiscriminatory physical access to the local exchange facilities to nonintegrated competitive common carriers which are entirely dependent on such access to be able to reach their customers. The second is establishing a fair and equitable price for such access.

Chapter 8 deals in detail with the many problems which have been encountered in attempting to assure nondiscriminatory access/interconnection under a policy of promoting competition in what is still a highly concentrated industry. The problems of assuring nondiscriminatory interconnection of interexchange carriers to the local loop and guaranteeing that the prices charged for such interconnection are appropriate will have to be resolved if competition is to be full, fair, and effective.

A policy of maximal separation, in our view, should explicitly recognize the incentives and opportunities for a dominant carrier to discriminate in matters of access to local exchange bottleneck facilities and should provide for structural safeguards to limit the potential for anticompetitive abuse. Such safeguards would be aimed primarily at reducing the ability of local operating affiliates of the dominant carrier to discriminate against competitors in matters of access charges and physical interconnection to the local loop.

One frequently suggested approach would require that a dominant carrier's interexchange transmission operations and facilities be separated from its purely local (intraexchange) operations. Applying the rationale of maximal separation, this approach would involve creating a separate subsidiary for interexchange service with the pertinent conditions and competitive safeguards. Such a separate subsidiary arrangement would provide the enhanced visibility which FCC needs to detect, and hopefully deter, unfair discrimination in matters of access charges and physical interconnection. By minimizing (if not totally eliminating) the problems posed by shared plant, equipment, and personnel and by requiring the dominant carrier to deal with itself on an arm's length basis at the connection between local service and other markets, the separate subsidiairy device can offer greater assurance that the same access price is paid by all market participants and can facilitate FCC's task of guarding against anticompetitive interconnection practices.

As in other areas where separate subsidiaries are used to deal with problems posed by corporate incentives, requirements of structral separation and arm's length dealing will not in themselves completely eliminate the problems associated with interconnection with bottleneck local exchange facilities. Ultimately, such requirements, since they do not act directly on the incentives of the dominant firm, are only as good as the regulatory scrutiny and enforcement tools available to ensure compliance with them. It would be necessary, we believe, for

FCC to continue its title II regulation, to (1) monitor industry practices regarding interconnection, (2) act promptly in handling complaints of abuses, and (3) take appropriate action to penalize violations of its rules and requirements.

CONCLUSIONS

Technological advances, along with FCC and judicial decisions, have given rise in recent years to steadily increasing competition in the domestic telecommunications industry. The growth of competition and the often noted convergence of communications and data processing technologies have created a need for a coherent and comprehensive approach to the problem of promoting and protecting emerging competition in an industry still characterized by the existence of substantial monopoly power. Among the proposals for dealing with this problem--including confinement of dominant carriers to provision of basic telecommunications services, forced spinoffs (divestiture) to eliminate the sources of monopoly power, and use of fully separated subsidiaries for the offering of competitive equipment and services--the separate subsidiary approach seems to have found greatest favor among regulators and policymakers. It is the approach which FCC has proposed in its protracted and recently completed Second Computer Inquiry.

The most distinguishing feature of the separate subsidiary approach is that it does not directly affect or significantly alter the incentives of a firm possessing monopoly power to abuse that power for anticompetitive ends. Instead of spinning off operational segments of the dominant firm in such a way as to reduce or eliminate monopoly power (and, thereby, the incentives to behave anticompetitively), the separate subsidiary approach attempts to identify and illuminate the opportunities for abuse of monopoly power and through imposition of structural separation, accounting, and other requirements reduce the ability of the firm to behave in an anticompetitive manner or to do so without detection.

Separate subsidiaries aim at reducing the potential for cross-subsidy and other forms of anticompetitive behavior by minimizing the amount of joint and common costs, by giving visibility to intracorporate transactions through requirements of separate books of account for monopoly and competitive entities and through requirements of fully cost compensatory transfer pricing and arm's length dealings between corporate affiliates. Use of the separate subsidiary approach implies continued reliance on regulatory scrutiny and, when necessary, regulatory intervention.

Increasing the visibility of intracorporate transactions and illuminating the opportunities for cross-subsidy, predatory pricing and other forms of abuse presumes that someone will be monitoring what takes place. That someone is, logically, the FCC. In this sense, then, the separate subsidiary approach is

properly viewed as an alternative regulatory approach, an alternative to traditional title II-type regulation where it is deemed that technological and market conditions as well as public interest considerations call for something other than detailed price/earnings regulation.

Because of the inherent limitations of the separate subsidiary approach, that is, its inability to act fundamentally on corporate incentives and its reliance on separation requirements, accounting, disclosure, and behavioral proscriptions to forestall anticompetitive abuses, the effectiveness of the approach will depend primarily on the nature and stringency of the structural separation conditions and competitive safeguards which are imposed as well as on the quality of their implementation and enforcement. It is with these considerations in mind that we have reviewed the directives made by FCC in its Computer II proceeding, and it is on these grounds that we have found them wanting as a means of preventing anticompetitive abuse of monopoly power and of promoting the continued development of competition.

The separate subsidiary approach adopted by the Commission does not go far enough, in our view, in providing for organizational restructuring and separation of the activities of the dominant carrier. By allowing the dominant carrier the option of creating a single conglomerate subsidiary, offering both enhanced services and competitive terminal equipment, the Commission, we feel, is setting the stage for the creation of a huge deregulated entity that would be endowed from the moment of its creation with substantial market dominance, as well as a significant potential for internal cross-subsidy and a host of other anticompetitive actions. By the same token, by refraining from imposing structural separation in such vitally important areas as manufacturing and applied research and development, the Commission has left a considerable potential for cross-subsidy and improper sharing of inside information and has rendered its own regulatory tasks (to detect and prevent anticompetitive actions) immeasurably more difficult.

In every area where a significant potential for anticompetitive action exists and where the Commission has opted for minimal or no separation in preference to maximal separation which aims at reducing to the absolute minimum joint and common costs and other potentials for anticompetitive abuse, we believe the Commission needs to reconsider its approach and to impose the types of separation, conditions, and safeguards which will more assuredly protect and promote competition and render more feasible and effective its regulatory oversight responsibilities.

Finally, we believe that the Commission has moved too quickly toward implementating the separate subsidiary regulatory scheme, before many of the essential methodological and enforcement tools have been fully developed and before undertaking a systematic and thorough assessment of what will be required--in the way of resources, staffing, functional organization--to give the approach credibility and a realistic chance of success. The Commission,

we believe, has not taken sufficiently into account either the resource implications of the approach it has chosen or the fundamental prerequisites for successful implementation of the separate subsidiary deregulatory scheme.

It has not made adequate provision, in our view, for expeditious and timely resolution of a large number of issues which are crucial to the feasibility and workability of its chosen regulatory strategy. These open questions and unresolved issues include development of costing principles and an appropriate costing methodology (ch. 4), a Uniform System of Accounts appropriate for determining cost of service and equipment offerings and verifying the cost compensatory nature of intracorporate transactions (ch. 5), and depreciation issues, questions concerning deregulation of customer premises equipment (ch. 7), and questions regarding the appropriate form of capitalization and financing of separate subsidiaries.

At the same time, the Commission has given virtually no attention to the resource and organizational requirements implicit in the implementation and enforcement of the separate subsidiary regulatory scheme. This includes needs regarding the size and organization of staff; the specific analytical, monitoring, enforcement, and other functions that will need to be performed; the mix of skills, experience, and training that will be required; and the types of support systems and facilities (e.g., record and report filings and electronic data processing equipment) which will be needed to carry out and facilitate the Commission's regulatory tasks. As a result, it is unlikely that the Commission will be able to proceed according to its present schedule to implement the separate subsidiary approach by March 1, 1982. We believe implementation should not begin until the Commission is fully prepared and equipped to ensure the efficacy of separate subsidiaries as a device for promoting competition and protecting against the abuse of market power. At the same time, (see p. 125) the Commission should be mindful of the need to preserve the boundaries it has established between basic and enhanced services.

Looking beyond Computer II and its somewhat narrow focus on dominant carrier-provided enhanced services and customer premises equipment, we believe that the Commission needs to examine how its procompetitive objectives might be further advanced through broadened application of the principle of maximal separation. One area in which additional structural separation might yield significant competitive benefits involves distinct separation of a carrier's interexchange transmission facilities and activities from its local exchange operations. FCC has not to date, either in Computer II or in other proceedings, evaluated the cost and benefits of structural separation as a means to reduce or eliminate the incentives and opportunities for the bottleneck local exchange monopolist, who is also a major supplier of basic interexchange transmission services, to abuse its market power to the detriment of competitors and communications consumers who

benefit from competition. As a result, the Commission has overlooked an important area of anticompetitive abuse--one which is directly relevant to the ability of competitive suppliers of enhanced services to reach their potential customers--and has thereby rendered more difficult its task of preventing cross-subsidy as well as price and nonprice discrimination in matters of access and interconnection to bottleneck local exchange facilities.

RECOMMENDATIONS TO THE CHAIRMAN, FCC

We recommend that the Commission, as part of implementing any deregulatory scheme for enhanced service and customer premises equipment offerings based on the use of fully separated subsidiaries:

--Resolve outstanding costing, accounting, and depreciation issues which must be implemented prior to establishing separate subsidiaries.

--Assemble, organize, and train a staff for the essential tasks of monitoring, auditing, and enforcing compliance with its structural separation requirements and associated conditions.

--Give full and careful consideration to the potential benefits to be gained through a requirement of outside equity participation in separate subsidiaries and prescribe appropriate capitalization and financing arrangements for the separate subsidiaries.

We further recommend that the Commission, in using the separate subsidiary device for enhanced services and customer premises equipment, adopt an approach which more closely approximates true maximal separation. This implies:

--Separate directors, officers, and operating personnel for the separate subsidiaries.

--Separate books of accounts, records and reports maintained in appropriately detailed and fully auditable form for FCC review.

--Separate physical facilities and space.

--Appropriate restrictions on the rotation of officers and operating personnel among corporate entities (fashioned to take into account and to preclude the most significant potentials for anticompetitive abuse).

--Separate subsidiaries performing for themselves the bulk of basic operating functions such as marketing, advertising, applied research and development, procurement and manufacturing.

--Administrative services provided by the parent (or other corporate affiliate) to the separate subsidiaries on a fully cost compensatory, fully auditable basis.

In addition, in place of a single conglomerate subsidiary for all of the dominant carrier's deregulated enhanced service and customer premises equipment offerings, we recommend that the Commission, in the context of its intended review of subsidiary capitalization plans, include an assessment of requiring the dominant firm to establish multiple, fully separated subsidiaries. One possibility would be a requirement for separate, stand-alone, subsidiaries for both enhanced services and customer premises equipment.

Looking beyond the limited concerns of Computer II, we further recommend the Commission initiate a proceeding to evaluate the need for structural separation of a dominant carrier's interexchange facilities and activities from its purely intraexchange operations.

CHAPTER 7

DEPRECIATION RATE SETTING AND ITS IMPLICATIONS IN A MORE COMPETITIVE ENVIRONMENT

FCC's review of depreciable assets in prescribing depreciation rates is an important regulatory tool. Depreciation charges are a large part of a carrier's expenses and are a major factor in determining the carrier's rate base, both of which affect the overall revenue requirement.

During 1980 and 1981 FCC made changes to its methods and practices for setting depreciation rates. These have been largely in response to the rapid change in technology and are reflective of FCC's overall thrust for a more competitive environment. These changes along with interrelated issues directly affect competitive development and the efficiency of future regulatory oversight.

These issues, involving the determination of depreciation reserves by plant account, the recovery of reserve deficiencies, and the valuation of assets, must be resolved, we believe, before FCC proceeds in using the separate subsidiary device described in chapter 6. We also believe that FCC's program for prescribing depreciation rates must continue but in a manner which provides for active and thorough review by the Commmission and participation by the State regulatory commissions.

ACCOUNTING FOR DEPRECIABLE ASSETS

The concept of matching expenses with the period in which they result in revenues is a central principle of accounting theory. Depreciation accounting, as generally recognized in accounting literature, attempts to recover invested capital at a rate which is consistent with the rate at which the assets are consumed. Thus, the rate of depreciation should correspond to the expiration of an asset's service value and the depreciation expense should be assigned to each accounting period in which the asset provides a service. In determining the rate of depreciation, estimating an asset's probable service life and the method or procedure by which the service value of property is allocated to operating expenses are crucial points.

Service life estimation

Probable service life estimation for telecommunications plant is influenced by many factors including: (1) physical factors such as wear and tear, actions of the elements or deterioration and (2) functional factors such as inadequacy, obsolescence, changes in the art, changes in demand, and requirements of public authorities. Mortality data, a history of past service lives and recent life trends of like or similar plant, is the foundation of FCC's life estimation process. Depreciation engineers by studying the patterns of asset survivorship calculate for

each group of telephone plant within a particular plant account what the average realized life of the investment has been. The past experiences when combined with future expectations provides an estimated average life. Telephone plant accounts consist of many vintage groups 1/ and when the result for each vintage is weighted, an estimated average service life is determined for the entire plant account.

If the estimated service lives are longer than what might be actually experienced, then the asset's life may expire before all costs are recovered. Estimating shorter lives than actually experienced will overstate expenses and revenue requirements. In either case costs have not been spread evenly over time, thereby burdening future customers if estimates are too long and existing customers if too short.

There may be an incentive for the regulator to require longer service lives to spread the depreciation expense over longer periods of time thereby keeping rates low. Similarly a regulated monopoly carrier might be willing to spread his cost over longer periods of time to keep rates low, knowing that cost recovery is not denied but extended with the asset remaining in the rate base earning a return. Likewise, a regulated carrier with a large monopoly service, when faced with competition may also have an incentive to spread costs over longer periods of time to keep or acquire a competitive edge. If such is the case, then future customers will bear the cost.

Allocation method

In allocating a part of the net cost of an asset 2/ to operating expenses over its service life, generally accepted accounting principles require the distribution to be in a systematic and rational manner. While this allows for a variety of methods, the straight line method has been required by FCC for domestic telecommunications common carriers. This method assigns a uniform amount of the depreciable base to each period of the asset's estimated life. The straight line method of depreciation using vintage groups to determine depreciation rates was the only method allowed until November 6, 1980, when FCC allowed the straight line equal life group method.

The straight line equal life group (ELG) method divides each vintage group into similar groups, which are expected to have

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1/A vintage or vintage group is that plant placed in service in a particular year. Telephone poles placed in service in 1956 would be a vintage group.

2/Net cost of an asset is referred to by FCC's rules as the service value and defined as original cost of the asset, less any salvage and plus the cost of removal.

the same life. It is not possible to identify individual plant units with a given life, but it is possible through statistical estimation to establish the number of units or dollars of plant in each equal life group provided adequate mortality data is accumulated. FCC anticipates that this method will result in an increase to the ratepayer through higher depreciation expenses but in turn will provide a faster recovery of capital for the carriers. 1/

FCC in adopting ELG allowed the carriers to change from a whole life approach to remaining life when restudying asset lives of embedded plant. Using the whole life method, if the anticipated lifespan of a $10,000 investment was 10 years (10 percent depreciation rate over the life of the investment assuming zero net salvage) and after 5 years you restudy the surviving plant and determine the investment will have only a remaining life of 3 years, then the new rate would be based on the whole life of 8 years or 12.5 percent. Having already charged a 10-percent rate over 5 years, 50 percent has been charged off, but the remaining 3 years will be at a rate of 12.5 percent or only an additional 37.5 percent will be charged, thereby creating a depreciation shortfall of 12.5 percent (100 percent - (50 percent + 37.5 percent)). Using the remaining life approach, the remaining 50 percent of the surviving plant would be charged off over the average remaining life of 3 years at a rate of 16-2/3 percent.

FCC used the whole life method in the past because (1) current and future customers were only charged with the portion of asset costs that they would have been charged with if the previous life predictions had been correct (in the example 12.5 percent rather than 16-2/3 percent) and (2) large groups of plant are involved in which errors which underestimate the asset lives should balance those which overestimated lives.

Plant accounts

FCC's rules for telephone common carriers (47 CFR 31.02-82) established the following classes of depreciable telephone plant: buildings, central office equipment, station apparatus, station connections, large private branch exchanges, pole lines, aerial cable, underground cable, buried cable, submarine cable, aerial wire, underground conduit, furniture and office equipment, and vehicles and other work equipment. 2/ Each account represents the cummulative plant acquired without making distinction as to vintage.

1/A explanation of ELG and its adoption by FCC is discussed on page 143.

2/Examples of items included in each plant account are shown in appendix X.

Because of the large volume of plant and investment required for each telephone plant account FCC requires a detailed elaboration for each referred to as continuing property records. These records show the portion of the total plant cost associated with each unit or aggregate of similar units of property. FCC requires the records to contain such detailed description and classification of property record units to permit their ready identification and verification. The following objectives are established by FCC for maintaining the property records:

--An inventory of property record units which may be readily spot checked for proof of physical existence.

--The association of costs with such property record units to assure accurate accounting retirements.

--The determination of dates of installation and removal of plant retired to provide data for use in connection with depreciation mortality studies.

Depreciation reserve

The monthly and annual provisions for depreciation expense (that portion of the cost of depreciable assets recovered over the life of the asset) are charged to depreciation expense, an income statement account, and credited to reserve for depreciation, an account on the asset side of the balance sheet shown as a deduction from depreciable plant. The balance of the reserve account represents the accumulated depreciation credit to the account (accruals based on charges over time to the depreciation expense) and credits based on gross salvage less the accumulated charges to the depreciation reserve for property which has been retired and charges for the cost of removing the retired plant from service. Thus the cost reflected in the depreciable plant account when offset by the reserve account represents the balance of the cost of the asset which has not been charged against revenue at the end of a given accounting period.

Although the purpose of depreciation accounting is to protect the integrity of invested capital by charging a portion of the cost of depreciable assets over time to operating expenses, depreciation accounting is not intended to finance replacements. In this regard, the depreciation reserve does not represent a fund to be drawn upon for capital replacements. It is only by generating enough revenues to cover expenses, including depreciation expenses, that past capital expenditures are converted back to cash. This cash can then be used by the business entity to best suit its immediate and long-term needs, which could include replacing assets.

FCC's rules prior to the November 6, 1980, order required for corporate balance sheet purposes that the depreciation reserve account be regarded and treated as a single composite reserve. For purposes of analysis, however, FCC required the carriers to

maintain subsidiary records (about 30 classes or subclasses of plant) in which the depreciation reserve was broken down into component parts corresponding to the primary telephone plant accounts which include depreciable telephone plant. The subsidiary records were required to show the current credits and debits to the reserve in complete detail for each primary plant account.

DEPRECIATION--ITS IMPACT ON REVENUE REQUIREMENT

Depreciation charges affect a carrier's revenue requirement 1/ in two ways. First, they are a large part of a carrier's expenses and second, they are a major factor in determining its rate base. FCC's review of depreciable assets in prescribing depreciation rates is, therefore, an important regulatory tool.

Depreciation expense--its size

The depreciation expense represents the estimated annual loss in service value of the assets a carrier has devoted to service. For the 11 telephone companies which FCC reviewed in 1980 (this representing about a third which are reviewed every 3 years) the total annual depreciation expense was $3.7 billion. This represents 21.4 percent of their total operating expense of $17.3 billion and for each company depreciation was one of the largest categories of operating expense. For AT&T the 1980 depreciation expense was $7.039 billion, or 20.5 percent, of total operating expenses of $34.187 billion. Similarly, for those companies of the General Telephone & Electronics Corporation for which FCC prescribes depreciation rates, the 1980 depreciation expense was $510 million, or 27.5 percent, of total operating expenses of $1,854 million.

Given the size and impact that the depreciation expense has on total operating expenses, any change by the company regarding service lives and salvage percentages can directly increase or decrease the revenue requirement. For example, for the 11 telephone companies for which FCC prescribed rates in 1980, those rates resulted in annual increases of $337 million, due primarily to shorter life estimates. An official in FCC's Depreciation Rates Branch and an industry representative both agreed that shorter service lives can be expected to continue given the rapid pace of technological development. Estimating these service lives and establishing depreciation rates based on these changes in life estimates will continue to be a regulatory tool which FCC must use. Through its depreciation rate setting practices--one which includes and involves the State regulatory commissions--FCC should be in a position to determine whether a regulated carrier is overstating its depreciation expense to generate additional revenues.

1/The components of a carrier's revenue requirement are discussed on page 31.

Depreciation's impact on the rate base

Depreciation charges increase the depreciation reserve account which is subtracted from gross plant investment in arriving at net plant investment. An increase in the depreciation reserve lowers net plant and thus lowers the plant to be included in the rate base. At the end of 1980 the depreciable telephone plant for the 36 carriers which are actively reviewed by FCC was $139.7 billion with a related depreciation reserve of $26.1 billion thus providing a net plant in service of $113.6 billion. Depending on whether the present recorded depreciation reserve for the telephone carriers accurately reflects the accumulated loss in service value of the property presently surviving, determines whether the Commission can properly ascertain the remaining cost of the property which should be included in the rate base. It has been the Commission's, the telephone industry's, and new competing entrants' concern that a potential reserve deficiency may exist since depreciation charges may not have kept pace with technological change. An inadequate reserve by the carriers may have a potential rippling effect on future ratepayers as well as competitors in the telecommunications market. In this regard, if the reserve is too low, then present and future ratepayers may be asked to "make up" the deficiencies through increased rates.

Responsibilities for prescribing depreciation rates

Setting and prescribing depreciation rates requires interaction among FCC, the regulated company, and the State commission. Section 220(a) of the Communications Act gives FCC the authority, in its discretion, to prescribe the forms of any and all accounts, records, and memorandums to be kept by a carrier which is subject to the 1934 Act. Section 220(b) requires FCC to prescribe the classes of property for which depreciation charges may be properly included under operating expenses, and the percentages of depreciation which shall be charged regarding each of such classes of property. Section 220(b) also allows FCC to modify the classes and percentages prescribed when it deems necessary. Section 220(i) requires FCC before prescribing depreciation charges to give the State commissions having an interest a reasonable opportunity to present their view and to receive and consider such views and recommendations.

Part 31 of FCC's rules establishes for overall accounting purposes a Uniform System of Accounts which includes, for example, sections pertaining to depreciation definitions, computations of depreciation rates, depreciation charges, classes of depreciable telephone plant, plant retired for causes not factors in depreciation, and depreciation reserves. Part 43 of FCC's rules set forth requirements for reports on proposed changes in depreciation rates.

In prescribing depreciation rates FCC's Depreciation Rates Branch reviews each year the proposed rates for about one-third

of the 36 telephone operating companies for which the Commission actively prescribes rates. The Depreciation Rates Branch receives studies from the companies about a year before the actual prescription by FCC. These studies contain details of basic historic mortality and salvage experience. This data is analyzed independently by the carrier, the State commissions, and FCC to determine the distribution of retirements by age, life indications and trends, and salvage and cost of removal percentages and trends. About 6 months prior to prescription the carrier submits its analysis of the basic data and analysis of any planning, engineering, or other operating data which was used in estimating future lives and net salvage percentages. The carrier's submission also includes its proposals of average service lives, net salvage percentage, and depreciation rates.

The Depreciation Rates Branch reviews the carrier's studies and prepares a report containing a summary of its proposals and a discussion of the differences between the carrier's and its proposals. The State commissions may prepare similar reports. A meeting is then held among the three parties to discuss issues and areas where disagreements exist.

After the three-way meeting the regulated company files a request for approval of the rates developed at the three-way meeting. FCC's Chief, Accounting and Audits Division, under authority delegated to him by the Commission may, on an interim basis, approve these rates. The rates, after public notice, are adopted or rejected by the Commission.

CURRENT FCC ACTIONS AND THEIR RELATIONSHIP TO PAST PRACTICES

As the telephone industry has become subject to competitive entry and technological change has continued at a rapid pace, FCC is faced with issues relating to depreciable assets regarding (1) the impact of changing from a straight line vintage group to permitting the use of a straight line equal life group depreciation method and permitting the use of remaining life for embedded investment, (2) the proper method for allocating the depreciation reserve account for AT&T, (3) changes to the station connections account, and (4) deregulation of customer premises equipment embodied in the Commission's Computer II Decision.

While each of these issues has its roots in the past practices of FCC's depreciation accounting in a regulated monopoly environment, their future implications touch on the efficiency of future regulatory oversight and the competitiveness of emerging industries.

Change to equal life group depreciation

On November 6, 1980, FCC adopted straight line equal life group depreciation for new property additions and in doing so

stated that it would allow alternative depreciation methods at the carrier's option, with the provision that implementation be under the supervision of FCC's staff. This change by FCC from the straight line vintage group depreciation resulted from a petition by AT&T in September 1973 (Docket 20188) to permit property to be placed in subgroups comprised of units expected to have the same life.

The reason given by AT&T for proposing ELG was that this method would provide for the recovery of capital more nearly in line with consumption as measured in the physical retirement of property. The following simplified example illustrates the difference between straight line vintage group and ELG.

If a telephone company puts three vehicles, each costing $1,000, into service in 1 year, there would be a total investment of $3,000. Based on life studies and future projection a life is assigned to each vehicle--vehicle 1--1 year; vehicle 2--2 years; and vehicle 3--3 years. The average life the vehicles will have is 2 years or a depreciation rate of 50 percent. Using the vintage group method and applying this rate to the investment of $3,000 would recover $1,500. The first vehicle being retired in year 1 would leave $2,000 invested ($3,000-$1,000). In year 2 recovery would be $1,000 leaving the remaining $500 to recover in year 3.

Using the same example, but applying ELG, knowing that vehicle 1 has a life of 1 year a 100-percent rate would be applied, vehicle 2 has a 2-year life a 50-percent rate would be applied, and vehicle 3 has a 3-year life then a 33-1/3-percent rate would be applied. So year 1 depreciation would look like this.

Vehicle 1 (100% x $1,000)	=	$1,000
Vehicle 2 (50% x 1,000)	=	500
Vehicle 3 (33 1/3% x 1,000)	=	333
Total first year depreciation		$1,833

Similarly, year 2 depreciation would then be $833 and year 3 depreciation would be $333. The use of ELG methods thereby results in a higher accrual rate during the earlier years of the total property service life and a lower rate in later years.

The ELG method, also known as unit summation, is not new. Its chief disadvantage, however, has been the need to have good plant data from which reasonably accurate future estimates of mortality can be made. In this case, good plant data means the long-term accumulation of data for large numbers of units within each group of property. In this regard, the American Institute of Certified Public Accountants, in commenting on this to the Commission stated that ELG is a preferable alternative to vintage group depreciation, providing that a company has the ability to develop the information necessary to implement such a refinement. Other comments including a study done for FCC on depreciation

rates and practices and policies 1/ noted that it would be preferable in adopting ELG that reserves by vintage by depreciation plant category be maintained. Reserve by vintage by depreciation plant category would allow for regulatory review to ensure the utilities have not under or over recovered their investment through their rates.

State commissions commenting on the ELG proposal did not support ELG, citing particularly that the ELG procedures will necessitate heavy reliance on the use of computers in gathering data, that the use of hypothetical engineering judgment will be necessary, and if such is the case then it would be questionable whether any State commission would be in a position to check and monitor the accuracy of depreciation accruals. State commissions also noted revenue requirements and the rates would increase.

FCC in adopting ELG noted that this method was acceptable provided it is assured that adequate data is available for proper application of this method and that recordkeeping and reporting practices will enable monitoring of the reasonableness of the rate of allocation of both original cost and provisions for salvage and removal. FCC stated that the impact of revenue requirements and the burdens placed on the regulatory staffs required consideration. The Commission, therefore, directed the implementation of ELG on a progressive basis. During 1981, new additions to property falling in the broad classification of outside plant, in 1982 new additions to property falling within the broad classification of central office equipment, and in 1983 all new additions to the remaining categories of plant investment would be considered.

In adopting the ELG depreciation method, FCC noted that this method would apply to new additions of plant and not to embedded investment, because of the lack of AT&T's depreciation data on a vintage level of investment basis. FCC noted that if new additions to plant are depreciated under the ELG or some other method, then the embedded balance subject to vintage group depreciation will diminish using remaining life and ultimately be fully depreciated and retired. FCC required that the telephone companies maintain depreciation reserves by account corresponding to the classes of depreciable telephone plant accounts.

The Commission also approved the use of remaining life as a corrective mechanism as depreciation rates are periodically restudied. It directed the staff to report the differences between remaining life and whole life rates for a period of at least 3 years. The dual reporting requirement was set at 3 years so that it would correspond to FCC's 3-year represcription cycle.

1/Study of common carrier depreciation rate practices and policies, Ernst & Ernst, July 29, 1977.

According to an FCC official, during this time it was envisioned that remaining life rates would be implemented.

FCC described the difference between the whole life and remaining life depreciation rates calculation in that the former attempts to determine the annual charge that would be appropriate in the event that the current predictions of the whole life (estimated future life added to current experienced or expired life) were in fact correct. The remaining life process proceeds on the premise that the current prediction of remaining or prospective life is more correct and then attempts to allocate any unrecovered or unallocated cost over the time period. Thus, the original cost less accumulated reserve less future net salvage is divided by the prospective remaining life in order to determine the annual future charges to expense.

It has long been recognized that setting service lives and prescribing depreciation rates is not a precise science. In adopting remaining life, FCC noted that it was allowing the telephone carrier a corrective mechanism when there is a need to increase or decrease the current and prospective charges to assure that all costs are allocated by the time of plant retirement. This, according to FCC, will allow it to set rates which, while possibly increasing revenue requirements, will also allow errors of life estimation which have been inadequate in the past to be recovered based on changed remaining life estimates.

Allocating the depreciation reserve account

One requisite according to FCC for applying remaining life rates is the ability to determine net unrecovered cost. For this, the current reserve for depreciation attributable to the particular book balances of investment must be known if net unrecovered cost is to be determined. At the present time FCC noted that AT&T does not have book reserve for depreciation balances at even the plant account or category of investment level, let alone at the more disaggregated vintage level. The Commission in Docket 20188 ordered the carriers to maintain depreciation reserves by plant account for new investments and ordered its staff to determine the most reasonable allocation of AT&T's current embedded book reserve amounting to about $24 billion as of December 31, 1980, to the various plant categories.

In a public notice in January 1981 seeking comments on how this reserve should be allocated, FCC stated that it had two principal alternative reserve allocation methods under consideration: (1) allocation based on the actual debits and credits to the reserve which are attributable to specific subclasses of plant and (2) allocation based on a distribution determined from theoretical reserve studies.

Section 31.171(c) of the Commission's rules prior to the November 6, 1980, order required that

> "* * * for purposes of analysis, the company shall maintain subsidiary records in which the depreciation reserve is broken down into component parts corresponding to the primary telephone plant accounts which include depreciable telephone plant* * *."

In this regard, FCC noted in its public notice that the aggregate depreciation reserve is the accounting accumulation of accrual, retirement, salvage, and costs of removal all of which are directly traceable to specific subclasses of property for which depreciation rates have been prescribed. FCC states that a reserve can be developed for a specific class of plant based on analysis of actual depreciation reserve activity, and the reserve developed in this manner represents capital recovery which has occurred for that class of plant. FCC noted, however, that determining category reserves in this manner does present minor problems, because of accounting changes and the reclassification of assets between plant accounts, but that a reasonable basis for estimating the appropriate category reserve adjustments is available and that the overall distortion of category reserves resulting from past accounting changes and plant reclassifications is relatively small.

A theoretical reserve study represents the aggregate of annual depreciation charges during the average remaining life of each plant account which is estimated on the basis of depreciation rates deemed appropriate at the time of the study in light of best available data. The aggregate book reserve is then allocated to the plant categories in proportion to the distribution of the theoretical reserves.

The process of allocating reserve based on theoretical studies can be illustrated using the following simplified example.

Assume three plant accounts A, B, C with balances of $50, $30, and $40 billion, respectively, and a total depreciation reserve to be allocated of $20 billion.

The book reserve figures shown in figure 1 of $10 for A, $5 for B, and $5 for C represent those reserves by plant account based on actual debits and credits to these reserves by plant account and the total for each account represents capital recovery which has occurred for that class of plant.

Figure 1

Plant account	Column 1 Balance of plant acct.	Column 2 Book reserve	Column 3 (Col. 1 - Col. 2) Net book
	(000,000,000)		
A	$ 50	$10	$ 40
B	30	5	25
C	40	5	35
Total	$120	$20	$100

Figure 2

Plant account	Column 1 Balance of plant acct.	Column 2 Theoretical reserve	Col. 3 Ratio	Column 4 (Col. 3x2) Allocated reserve	Column 5 (Col. 1-4) Net book
	(000,000,000)				
A	$ 50	$12	20/30	$ 8	$ 42
B	30	12	20/30	8	22
C	40	6	20/30	4	36
Total	$120	$30		$20	$100

Using the current life estimates, the theoretical reserve for each plant category was determined to be $12 billion for A, $12 billion for B, and $6 billion for C or a composite theoretical reserve of $30 billion. The ratio of the total actual book reserve to the composite theoretical reserve is then applied to each of the individual theoretical reserve plant accounts. In figure 2 this would be 20/30, or two-thirds, of $12 for A, $12 for B, and $6 for C, thus allocating the total $20 billion reserve in the following proportion, $8 for A, $8 for B, and $4 for C.

A redistribution of the reserve based on other than the actual reserve balances by plant account then could have the effect of requiring ratepayers of a certain service to pay additional amounts because other categories of plant are underdepreciated. This can be seen from the illustration in which the net book cost to be distributed from plant account A in figure 1 is $40 billion and would increase to $42 billion in figure 2. If, in this illustration, net book cost for plant A represented that plant which is used to furnish noncompetitive services, then the cost to be recovered from regulated services (the ratepayer) would increase by $2 billion.

According to FCC the theoretical reserve approach allocates more than would be allocated using actual recorded amounts to categories whose life characteristics are becoming relatively shorter. If such is the case, then depending on the outcome of

theoretical study, the redistribution of the reserve will affect the net book cost to be recovered from various classes of ratepayers. In this regard, in its January 1981 notice FCC noted

> "* * * We think that past contributions by various customer groups should be recognized and given effect. Similarly, we believe that the retention of information as to sources of any underaccrual provides an important reference point to assist us and the States in determining proper corrective action (e.g., rate adjustments) to be taken to remedy any shortfall."

Depreciation of station connections investment

Station connections is generally that part of depreciable telephone property from the telephone pole to the customers premises (outside) and the inside wiring, including installation within the premises (inside). Station connections have been capitalized in the past to spread the cost of adding new customers over all customers, the new customers thereby broadening the overall universality of the telephone service. At the end of 1980, station connections investment for all carriers was in excess of $13.7 billion. According to FCC the annual activity in station connections for 1981 and later years is expected to run in excess of $3 billion per year with an accelerating rate of growth.

Retirements of station connections are due to station movements which are independent of time. In depreciating the station connections investment, FCC has in the past attempted to assign just enough cost and reserve credit to offset any given years retirements plus cost of removals less salvage. Theoretically there would be no reserve balance, thus the embedded investment in the station connections account at any given time represents the net book balance for the account. 1/

FCC in Phase II of Docket 19129 held that accounting for station connections should be modified so as to place the burden of and cost associated with station connections on the causative ratepayer as opposed to the present system which places the burden on present and future ratepayers. This was based on FCC's findings that 77 percent of the telephones installed during the 5-year period ending December 31, 1974, did not represent increased services, but occurred because existing customers moved, or because of offsets of the loss of one customer with the gain of

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1/According to the Chief of FCC's Depreciation Rates Branch, there is now over a $1 billion balance in the depreciation reserves related to this account because retirement rates in recent years have dropped and depreciation rates have not been adjusted downward as rapidly.

another. This was referred to by FCC as "churning." FCC in Docket 19129 ordered AT&T to submit a plan for changing the accounting of station connection costs. AT&T petitioned the Commission on November 16, 1977, for a rulemaking. After receiving comments on AT&T's petition the Commission began its own rulemaking (Docket 79-105) on August 14, 1979.

On March 31, 1981, FCC in its first report and order changed its past accounting treatment for station connections. The new inside wiring costs can be expensed and phased in over a 4-year period beginning October 1, 1981, or expensed immediately depending on actions by the State commissions. For the embedded inside wiring costs FCC ordered that it could be amortized over a 10-year period; however, FCC left to the State commissions just how the cost will be passed on to customers. In adopting this change the Commission looked upon it as a stopgap measure to halt this fast-growing rate base item.

The outside portion of the station connections account will continue to be capitalized but will be depreciated in accordance with Docket 20188. To accomplish this, FCC directed the carriers to separate the present investment in the station connections account into the two primary parts, station connections inside wiring and station connections-other. Once established the carriers were directed to maintain this information on a continued basis and be prepared to supply it as directed by the Commission staff.

In this regard, however, FCC stated that

> "* * * the precise identification of a single point of demarcation to distinguish that portion of the investment which will continue to be capitalized and that portion which will be expensed cannot be made for each and every circumstance."

Establishing a demarcation point would, according to FCC, be the subject of another proceeding.

The Commission in a separate notice adopted on May 18, 1981, also invited public comment on the prospect of deregulating completely the inside wiring portion of the station connections costs. This approach would thereby place the cost burden on the causative customers.

Deregulation of Customer Premises Equipment

FCC in its April 1980 final decision in Docket 20828 (Computer II) found that CPE should be provided on a nontariffed basis. FCC provided for a transition period lasting until March 1, 1982. FCC required that unbundled rates be filed by March 1, 1981, with the respective State commissions and that all

carrier terminal equipment be detariffed by March 1, 1982. FCC required that after March 1, 1982, CPE offered by AT&T and GTE be provided through a separate subsidiary. FCC also stated the need for a

> "proceeding that would examine into possible changes to depreciation schedules and also address the basis upon which unsold equipment should be removed from a carrier's regulated rate base and books of account."

In its October 1980 reconsideration of Computer II, FCC modified its final decision, requiring that equipment which is embedded in the separations process 1/ and tariffed with the various States would be distinguished from new CPE and federally tariffed CPE. New CPE was described as that equipment which is not in service as of March 1, 1982, and is offered to consumers after this date. New CPE and associated maintenance must be separated by the March 1982 date from a carrier's basic service and offered on a nonregulated basis. All equipment tariffed with FCC in conjunction with interstate or foreign communications was ordered to be detariffed as of March 1982. 2/ FCC continued structural requirements for AT&T but no longer required separate subsidiaries for GTE.

For that part of the CPE which was not deregulated, the embedded CPE, FCC stated that it would institute a separate "implementation proceeding" to address the transitional mechanisms for deregulating this equipment. The implementation proceeding FCC noted was to address the issues of capital recovery and asset valuation, alternative mechanisms by which transition to an unregulated CPE environment may be achieved, and the appropriate time period for removal of embedded CPE investment from separations and a carrier's rate base.

EFFICIENCY OF FUTURE REGULATORY OVERSIGHT

Each of the actions taken by the Commission discussed above directly affects the efficiency of regulatory oversight needed in prescribing depreciation rates. These actions have placed demands on FCC staff to develop and implement changes which, according to

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1/This process is discussed on page 162.

2/On February 20, 1981, AT&T petitioned for further reconsideration by the Commission of Docket 20828. AT&T noted that the bifurcated approach for CPE will be difficult to implement on March 1, 1982.

FCC officials, may increase the revenue requirement to ratepayers by $1.55 billion in 1981. 1/

In discussing FCC's adoption of ELG with FCC's Depreciation Rates Branch Chief he said that ELG was theoretically a better way of achieving straight line depreciation. He went on to point out, however, that there are many uncertainties surrounding its implementation. He noted that FCC (1) had no procedures nor really a reasonable approach for implementing ELG, (2) did not know what is needed to monitor ELG, and (3) did not know what accounting controls were necessary. Also, if in 1981, ELG revisions to all plant categories were needed (one carrier has requested revision for outside plant and central office equipment) the official said that without operating procedures or knowledgeable staff there would be no way the Depreciation Rates Branch could fully analyze the proposed revisions.

In adopting the ELG depreciation method, FCC noted that this method would apply to new additions of plant and not to embedded investment. FCC stated that if new additions to plant are depreciated under the ELG or some other method, then the balance subject to vintage group depreciation will diminish and ultimately be fully depreciated and retired. While FCC in adopting ELG documented the importance of depreciation data on a vintage level of investment for new additions, it did not require that the telephone companies maintain depreciation reserves on a vintage level, but rather by account corresponding to the classes of depreciable telephone plant accounts. According to an official in the Common Carrier Bureau this was done because the Uniform System of Accounts does not now require plant investment to be maintained by vintage and until the system is revised it would be inappropriate to require reserves by vintage.

Without methods and procedures to monitor and analyze the vast amount of data involving large numbers of units within each group of property required in using ELG and without detailed information by vintage for each depreciable plant category, FCC will not be in a position to review carrier submissions regarding estimates of service lives and salvage factors or in setting service rates to determine the depreciation expense applicable to that plant by vintage used in providing the service. Therefore, regulatory review ensuring that carriers have not under or over recovered their investment or price discriminated, through their depreciation rates cannot be assured. Further, without detailed information by vintage a later allocation of the reserves by classes of depreciable telephone plant accounts to reserves by vintage will be required.

1/FCC's estimated increases in total revenue requirements for 1981 relating to depreciation changes are shown in appendix XI.

In adopting remaining life rates as part of its ELG proceeding, FCC noted that it will allow errors of life estimation which have been inadequate in the past to be recovered based on changed remaining life estimates. According to FCC, both AT&T and GTE want to implement remaining life rates for all accounts for all jurisdictions in 1981. This would involve over 2,000 rates since there are about 78 jurisdictions with approximately 30 accounts for each. To revise these rates and verify if the carriers have calculated the remaining life rates correctly, FCC's Depreciation Rates Branch Chief told us that it would be a formidable task since (1) there are anywhere from 20 to 60 vintages for each of the 30 accounts and the service life has to be estimated for each vintage and combined on the basis of the surviving investment in each vintage 1/ and (2) State commission views obtained.

The Branch Chief has proposed that reviewing remaining life rates be implemented in conjunction with the detailed studies prepared during the 3-year cycle of depreciation represcription. This, he feels, will allow for thorough analysis in support of changes which, according to FCC estimates, may result in additional revenue requirements of $0.6 billion for 1981, $1.55 billion for 1982, and $2.07 billion for 1983.

We believe this approach represents a positive step for two reasons. First, it should allow for the careful review by FCC which is necessary during the transition to remaining life rates--a transition which, according to FCC, may result in substantially higher rates. Second, it should allow the full opportunity for State commissions to express their view through interaction with FCC. This interaction is an important aspect in ensuring a more cohesive and coordinated approach for implementing the capital recovery policies established by FCC in Docket 20188.

Allocating the reserves to the various plant accounts for AT&T is essential for future FCC actions in prescribing remaining life rates for the AT&T companies. In Docket 20188 FCC directed its staff to allocate the reserve as expeditiously as possible. In this regard, we support quick and decisive action; however, as FCC has recognized in its January 1981 Notice:

> "The method used to allocate the book reserve is extremely important because it may result in the redistribution of a significant amount of revenue requirement between various categories of ratepayers, e.g., between current and future customers, users of

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1/More specifically a generation arrangement--the method by which the average life of each vintage group is determined by combining its (past) realized life with (future) estimated life still to be realized (the unrealized life). The average lives of the vintage groups, so determined, are reciprocally weighted to arrive at the average service life of the category.

inter and intrastate services, inter- and intra-exchange services, business and residential services, and monopoly and competitive services."

We believe an expeditious allocation must, therefore, be balanced against the long-term implications of this one-time and first-time allocation of AT&T's reserve account. Such implications as stated in FCC's notice and illustrated on page 147 are the foundation for future regulatory oversight.

In requiring changes adopted in Docket 79-105 for accounting to the station connections account, FCC is confronted with four important actions. First, it must divide an account with over $13.7 billion into two subclasses of plant--inside wiring and station connections-other. Second, in allocating the depreciation reserve, FCC must do so between inside wiring and outside plant classes. Third, the accounting for the retirements of the station connections-other plant classes will be changed from one of inward/outward movement of telephone sets to physical removal of the facilities. The current service life and depreciation rate will no longer be applicable, and new depreciation rates will be required for the outside plant classes for all jurisdictions. Fourth, FCC must monitor the appropriate monthly amount of the embedded plant to be amortized during the 10-year phase-in.

FCC instructed the carriers to divide the station connections account into its two parts. FCC did not provide a point of demarcation, rather leaving this to a subsequent proceeding. In discussing with an Accounting and Audits Division official how FCC plans to work with the carriers and how a division will be made without a demarcation point being established, we were told that FCC essentially will accept what the carriers submit.

Such an acceptance, however, does not provide FCC any oversight as to how much of the inside portion will be expensed rather than capitalized to the station connections-other account. We believe random verification and audit of the carriers' submissions would provide, at a minimum, some regulatory oversight.

Once the division is made, FCC must then set new depreciation rates for the station connections-other plant. In setting the depreciation rates for the entire station connections account in the past FCC has not identified, as they do for other depreciable assets, a specific list of items or units within the asset account which would key a retirement. 1/ Rather a retirement occurred with the outward movement of a telephone set or other piece of telephone apparatus. To set depreciation rates for outside plant

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1/The Commission rules (47 CFR 31.8) contains a list of retirement units for each plant account. For example, within the building account, a retirement unit would be a complete fire escape. Knowing this provides a basis from which to estimate service lives.

classes in accordance with Docket 20188 will now require, however, that retirement units be identified. In Docket 79-105 FCC does not make this identification or change the rules to recognize that a retirement to the outside plant will no longer be keyed by the outward movement of telephone sets. In the absence of a definition of what constitutes a retirement, FCC cannot estimate the probability of its occurrence. Therefore, without data on the probability of service lives, FCC can only arbitrarily set depreciation rates for the station connections-other plant.

Further, according to an official in FCC's Depreciation Rates Branch, they are uncertain as to what method should be used in setting depreciation rates for the station connections-other plant. He said, however, that it does not appear as if the equal life group method adopted in Docket 20188 will be appropriate because the account will lack the necessary historical mortality data.

DEPRECIATION CHANGES--THEIR EFFECT ON THE EMERGENCE OF COMPETITION

FCC's actions in its Computer II Decision to deregulate only new customer premises equipment 1/ and in Docket 20188 to adopt the use of remaining life rates to depreciate unrecovered investment were based in large part on the emergence of competition in the domestic common carrier telecommunications industry.

FCC in its reconsideration of Computer II chose a bifurcated approach for deregulating CPE. FCC defined the term embedded CPE to mean all CPE tariffed at the State level or subject to the separations process. FCC determined that embedded CPE would have a transition schedule separate from that of federally tariffed CPE 2/ and CPE not in service as of March 1, 1982. FCC further concluded that deregulation of new and federally tariffed CPE would occur on March 1, 1982, with those carriers affiliated with AT&T not allowed to offer CPE except through a separate subsidiary. FCC decided that the manner and timing of the embedded CPE's deregulation be subject to separate implementation proceedings. FCC took this approach because

> "* * * the difficult transitional issues arise not in connection with the provisions of new CPE, but in connection with the necessity to make adjustments to

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1/Accounts for station apparatus and large private branch exchanges contain the CPE--also referred to by FCC as terminal equipment.

2/Federally tariffed CPE includes equipment tariffed solely in conjunction with interstate and foreign services of both telephone and record carriers.

existing arrangements involving allocation of costs, investment and revenues associated with embedded equipment jointly used for both intrastate and interstate or foreign services * * * A bifurcated approach would avoid the significant dislocations of an abrupt transition that are alleged to occur if all CPE is deregulated and removed from separations as of March 1, 1982."

We believe to implement its decisions, particularly its requirement for establishing by March 1, 1982, a separate subsidiary 1/ offering new CPE, without first addressing the recovery mechanisms for depreciation reserve deficiencies, will fragment rather than enhance competition.

Recovering depreciation reserve deficiencies

The balance of the depreciation reserve account represents the accumulated depreciation credited to the account on charges over time. It is this balance that FCC and industry officials now believe is too low. This they feel has occurred because of rapid technological innovations and competitive entry, both of which have reduced plant lives more quickly than originally estimated. The shorter plant lives reflect a reduction in asset values unrecovered through charges to the depreciation reserve.

The reasons given for unrecovered investment are varied. One FCC official told us that service lives and depreciation rates have not kept pace with the decline in asset value. The official noted that while it is difficult to say why this has occurred, any increase in the depreciation expense could raise rates to customers, something all regulators like to avoid. He said, therefore, there may be a tendency to spread recovery over longer periods. Another FCC official said that during his tenure at the Commission there has not been an effort to keep rates low, simply neither the Commission nor the carriers realized how fast technological changes were occurring. Industry officials have stated that faster recovery has been sought for years but not granted by FCC. Competitors argue that recovery has been extended to keep rates low in an effort to stifle competition.

We found no one reason which pointed to whether any one of the above positions are more substantive than the others. In moving to deregulate CPE, however, the methods to identify and treat unrecovered investment are vital aspects in creating a competitive environment for terminal equipment.

1/The limitations of using the separate subsidiary device adopted by FCC in its Computer II Decision and our recommendations for maximizing separations were discussed in chapter 6.

In FCC's divided approach embedded CPE will remain regulated with its future deregulation considered as part of the implementation phase of the Computer II Decision. Until such time, FCC noted that remaining life rates will be used to depreciate the unrecovered investment over its life. To accomplish this carriers have filed with FCC proposed changes in depreciation rates for terminal equipment. According to FCC one carrier's proposed remaining lives were based on product life cycle analyses prepared from the carrier's corporate marketing plans. The specific product life cycle analyses and supporting data were not provided in the carrier's filings, the carrier's considering it proprietary. The carrier stated that public disclosure of this information would put it at a competitive disadvantage and make its marketing plans difficult if not impossible to carry out.

FCC's Depreciation Rates Branch Chief told us that it is becoming exceedingly difficult to carry out FCC's statutory obligations of prescribing depreciation when much of the data that is required to assess the reasonablenesss of the depreciation rates proposals is proprietary. In this regard, according to FCC's rules, depreciation in part means the loss in service value from causes known to be in current operation. If these causes are controlled by the carrier's marketing and pricing strategies which may be aimed at shifting customer demand from one equipment type to another, and if these strategies are not known to FCC because they are proprietary then two problems for the regulator exist.

First, accurately estimating equipment service lives without all of the relevant data will be difficult at best, particularly when a carrier's marketing strategies are subject to change at its discretion. Second, marketing and pricing strategies by carriers can influence customer demand for various types of equipment, thereby resulting in reductions in lives and reserve deficiencies for equipment in which rate increases are being implemented. If higher rates are set for certain types of embedded equipment than for similar new unregulated equipment, the more likely it is that customers will no longer use such equipment. Therefore, embedded equipment cost will not be borne by the ratepayer to whom the plant was dedicated.

Given these two points, continued regulation of embedded CPE and deregulation of new CPE may increase the opportunities for carriers through their depreciation practices to achieve corporate goals of shifting customer demands from regulated embedded CPE to new unregulated CPE. Such an approach may not be in the best interest of a specific set of ratepayers or ratepayers in general since equipment cost might not be borne by the ratepayer who used it, and the real cost of the new technology will be understated. Further, if this approach allows the carriers to shift customer demand but not cost from regulated CPE to new unregulated CPE without FCC first identifying the reserve deficiencies and establishing a framework for deregulating all CPE, then competition while still in its infancy may be prevented from developing.

An allocation of AT&T's depreciation reserve to plant accounts must occur as a first step in determining depreciation reserve deficiencies. Without it FCC will lose control over depreciation ratesetting. FCC, through its January 1981 Notice is moving in this direction. This allocation, if based on actual debits and credits to the various plant accounts, may allow FCC to identify the reserve deficiencies. The difference between the actual reserves by plant account from this allocation and the reserves from the carrier's theoretical reserves would represent the deficiencies. 1/

Once these differences are identified then FCC could be in a position to treat separately the reserve deficiencies by plant account and the plant account's remaining net book costs. Such an approach would allow FCC to (1) define the extent of reserve deficiencies to be recovered, (2) set forth a specific method for their recovery, 2/ and (3) establish a baseline for determining asset value to be transferred to nonutility accounts or a separate subsidiary.

CONCLUSIONS

FCC's current process of setting depreciation rates has three elements which we believe are essential for its regulatory oversight of depreciation expenses. First, FCC has a legislative mandate to prescribe depreciation rates. We see no reason to alter this mandate for those carriers the Commission considers dominant. This is consistent with our recommendations contained in Chapter 2. The Commission through its analysis and prescription of depreciation rates and its opportunities for changes based on revised assumptions provides the regulatory overview of an expense item which is one of the largest parts of a carrier's revenue requirement.

Second, for depreciation rate-setting purposes FCC has a legislative mandate to obtain the views of the State commissions. Absent a similar mandate in other regulatory areas, as we have pointed out in chapter 3, FCC has done little to coordinate and interact with the State regulatory commissions. We believe State commission review and participation in the depreciation rate-setting process provides an early and clear opportunity for FCC and the State commissions to express their views for, and basis

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1/From our illustration on page 148, the actual book reserves in figure 1 of $10 for A, $5 for B, and $5 for C would be subtracted from the theoretical reserves in figure 2 of $12 for A, $12 for B, and $6 for C.

2/FCC could, for example, amortize the deficiencies over a period of time, or treat them, as its rules permit, as extraordinary retirements (47 CFR 31.02-83).

of, prescribing depreciation rates. Such an opportunity, we believe, provides FCC with timely input on the impact depreciation changes will have on the ratepayer and the carrier.

Third, the process provides for Commission review and approval, while at the same time allows for interim approval. This provides visibility and regulatory oversight by the Commission while at the same time not constraining the carrier's implementation of depreciation rates.

FCC's changes to its methods and practices for setting depreciation rates can have an impact, however, on both the efficiency of future regulatory oversight and the competitiveness of a developing customer premises equipment market. In this regard, uncertainties in implementing the provisions of Dockets 20188, 79-105, and FCC's Computer II Decision have not been resolved.

--Methods to implement ELG have not been developed.

--Depreciation reserves by vintage are not required for carriers implementing ELG because the USOA does not now require plant investment to be maintained by vintage.

--Prescribing remaining life depreciation rates for all jurisdictions in 1981 will not allow for FCC and State commission verification and review.

--AT&T's depreciation reserve account has not been allocated to plant accounts--essential for future FCC actions.

--Division of the station connections account will be based on carrier submissions.

--Requirements for setting depreciation rates for the outside plant of the station connections account have not been developed.

--Carriers incentives in establishing depreciation rates for embedded CPE, when new CPE will be deregulated on March 1, 1982, may prevent competitive development.

Before proceeding in a piecemeal fashion, we believe FCC must resolve these uncertainties. This will place FCC in a position to avoid accepting and approving depreciation rates with less than the rigorous review needed, permit active participation by the State commissions, and will enhance the development of competition.

RECOMMENDATIONS TO THE CHAIRMAN, FCC

We recommend that the Commission before prescribing depreciation rates based on changes adopted in Dockets 20188 and 79-105

--Develop specific procedures for evaluating and monitoring a carrier's depreciation rates based on ELG.

--Require depreciation reserves by vintage for a carrier's implementing ELG.

--Identify the retirement units and methods for depreciating the outside plant of station connections.

--Audit, through random selection, the carrier's division of the station connections account.

We further recommend that the Commission before implementing its Computer II Decision to deregulate new CPE and continue regulating embedded CPE, first identify the depreciation reserve deficiencies by plant account, develop a method for their recovery, and establish a framework for deregulating all CPE. Our recommendations in this regard are associated with our recommendations in chapter 6 for using the separate subsidiary device adopted by FCC in its Computer II Decision.

CHAPTER 8

ENSURING FAIR, NONDISCRIMINATORY ACCESS TO LOCAL EXCHANGES: CONGRESSIONAL ACTION IS NEEDED

With the introduction of competition in interstate telecommunications, changes in existing procedures used to integrate carrier operations became necessary. The new competitors brought with them the need to interconnect their facilities with those of the telephone industry. Particularly, they required access to local exchange facilities of telephone companies, since such facilities offered virtually the only means for the local distribution of interstate services. Because of the need for such access by the new carriers, it became necessary to formulate procedures which would allow them to interconnect their facilities with those of telephone companies and to determine how telephone companies should be compensated for local exchange access.

In FCC's 1971 Specialized Common Carrier decision, in which FCC opened the door to competitive entry in interstate telecommunications, FCC recognized the need for the new entrants to obtain local exchange access. Since that time FCC has reiterated the need for the establishment of nondiscriminatory access on numerous occasions.

Neither FCC's past actions nor its present proposals, however, resolve the following questions:

--What types and levels of interconnection should telephone companies be required to provide to the new carriers?

--What rates should be charged to new carriers for access to local exchanges?

--What effect would competition have on any subsidies which may have been provided between interstate services and intrastate services?

--Can nondiscriminatory access conditions be assured without major changes in telephone industry structure and procedures?

We believe that congressional action is needed to establish the basic framework for their resolution.

PAST FCC ACTIONS HAVE NOT RESOLVED ACCESS QUESTIONS

Since 1971 FCC has been involved in a variety of proceedings which were designed to secure adequate access arrangements for the new competitors. For the most part, however, these proceedings were aimed at providing short-term solutions to immediate problems, rather than addressing the fundamental questions needed

to establish fair, nondiscriminatory access terms, conditions, and rates.

Separations and settlements/
division of revenues: a brief overview

AT&T and the other approximately 1,500 independent telephone companies have traditionally operated as "partners" in providing telephone service. Their facilities have been interconnected into a nationwide telephone network which is used to provide both local and long-distance services. For example, under the traditional telephone industry arrangements, three carriers would typically be involved in furnishing interstate long haul MTS service: an originating telephone company, AT&T Long Lines, and a terminating company. Many of the facilities used in providing this interstate service would also be used for local or intrastate toll services.

Because many of the costs of providing interstate and intrastate services are shared or "common" costs, procedures had to be developed to allocate these costs to either the interstate (FCC regulated) or intrastate (State public utility commission regulated) jurisdiction. 1/ The process which was developed to accomplish this is known as separations and settlements/division of revenues. Separations refers to the allocation or separation of costs between jurisdictions. Settlements/division of revenues is the process of dividing interstate revenues collected among all the carriers involved in providing service. When all of the companies involved are affiliated with AT&T the process is called division of revenues. When AT&T and nonaffiliated companies are involved, it is known as interstate settlements.

Separations

Because regulatory responsibility is divided between FCC and State public utility commissions (see ch. 3), the costs and revenues associated with interstate and intrastate services must be segmented. Since most of the property of telephone companies is used in the joint provision of both interstate and intrastate services and a major portion of expenses is incurred in their joint rendition, this cost and revenue assignment process is a large and complex task.

To carry out this assignment of costs, FCC and the National Association of Regulatory Utility Commissioners, on behalf of the State commissions, in cooperation with the telephone industry, have developed a jurisdictional separations process. Since 1947 separations procedures have been formally set forth in a Separations Manual, which is approved by the FCC-NARUC Cooperative

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1/Once costs have been allocated to a jurisdiction, the relevant regulatory agency is responsible for determining how they should be allocated among carrier service offerings. This is done through the tariff review process. (See ch. 4.)

Committee on Communications. The Separations Manual is incorporated into Part 67 of FCC's rules.

Although the Separations Manual is used to allocate costs between the Federal and State jurisdictions, it does not specifically identify all of the relevent costs incurred by local telephone companies in providing interstate services. In general, the Manual relies on relative use of plant as the basic method for allocating costs by interstate and intrastate operations between them. However, for certain portions of nonusage sensitive local exchange plant, the Manual also uses a subscriber plant factor, which raises the cost assignment to interstate services above the relative use level. This additive is intended, according to the Manual, to recognize the "deterrent effect" which the interstate toll rate schedule has on actual interstate use of such plant. According to an FCC official, this implies that because interstate rates are usage sensitive whereas local rates generally are not, interstate usage of local exchange plant is less than if the rate schedules were similar. The use of separation procedures to allocate costs is further discussed in chapter 4.

Over the years, the Manual has been revised to place an increasing cost burden on interstate services. In light of the gradual shifting of cost responsibility to the interstate jurisdiction, allegations have been made that interstate services, thus, provide a subsidy to intrastate services so as to help keep local exchange rates low. Other parties have argued, however, that much of local exchange plant is designed primarily or exclusively for long-distance service and, thus, assigning costs on a relative use basis would place too high a cost burden on local services. The existence and direction of any subsidy which exists between interstate services remains, at present, an unresolved issue.

Settlements and division of revenues

Since more than one carrier may be involved in providing interstate services, methods are also needed to divide revenues collected among them. This process is basically accomplished through the use of an interstate revenue pool which contains all of the interstate MTS, WATS, private line, and other revenues collected by the originating telephone companies. Once collected, these revenues are then redistributed by AT&T Long Lines to unaffiliated local telephone companies to compensate them for costs which they have incurred in providing interstate services, including a return on their plant investment. The compensation which local carriers receive is not based precisely on the cost apportionment contained in the Separations Manual, however, but rather on the basis of arrangements made between the carriers. Once these settlements have been made, the amounts remaining are divided among AT&T Long Lines and its affiliated operating companies.

Access problems arise as competition enters interstate telecommuniations

In its 1971 Specialized Common Carrier decision, which opened interstate telecommunications services to competition, FCC set forth a requirement of nondiscriminatory access to local exchanges. However, approximately 4 years of legal struggle ensued before even interim interconnection arrangements could be developed for all of the private line services offered by the new carriers.

In its Specialized Common Carrier decision, FCC recognized that new entrants would need to be able to interconnect with the facilities of established carriers. Thus, FCC stated in the decision that established carriers with exchange facilities should, upon request, permit interconnection or leased channel arrangements on reasonable terms and conditions to be negotiated with the new carriers, and afford their customers the option of obtaining local distribution service under reasonable terms set forth in the tariff schedules of the local carriers. FCC added that it would also not condone any discrimination in the interconnection policy of local carriers.

Following the issuance of the decision, questions arose, however, concerning the extent to which AT&T and its associated companies were or should be required to interconnect their facilities with those of other common carriers (OCCs). One area of particular concern related to whether FCC's interconnection order applied to services such as foreign exchange and common controlled switching arrangements which directly access local exchanges. 1/

Foreign exchange service normally enables a subscriber to place calls to telephones in a distant or "foreign" exchange without paying MTS charges and enables persons in the foreign exchange area to place calls to the foreign exchange subscriber in a distant city by calling a local number without paying MTS charges or using operator assistance to make a collect call. Common controlled switching arrangements provide a subscriber with a leased private telecommunications network, including dedicated lines and switches, which the subscriber can use to communicate between points on its system. Common controlled switching arrangement subscribers can also obtain off network access lines which can be used in much the same manner as foreign exchange service in a distant city.

In a proceeding initiated in 1973 (Docket 19896) FCC examined the extent to which the new carriers were entitled to interconnect their facilities with those of telephone companies. In its decision FCC noted that while its previous interconnection orders "may

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1/Other private line services generally only required "local loop service" which connected the facilities of the new carrier to the premises of its subscriber.

not have been perfectly clear," they were intended to cover interconnection for the broad range of services offered by the new carriers, including foreign exchange and common controlled switching arrangements. FCC also concluded that AT&T had

> "* * * engaged in conduct which has resulted in the denial of, or unreasonable delay in establishing, physical connections with MCI and other specialized common carriers which are parties to this proceeding; that it pursued policies and practices which foreclosed the establishment of through routes, and the charges, facilities and regulations applicable thereto in connection with authorized interstate services of MCI and other specialized carriers; * * * and that Bell has discriminated against MCI and other specialized carriers in favor of its own Long Lines Department by denying to MCI and other specialized carriers the interconnection privileges presently provided to the said Long Lines Department in connection with authorized interstate services."

Accordingly, FCC ordered AT&T to offer OCCs interconnection facilities essential in rendering all of their authorized interstate and foreign communications services, including the local exchange facilities necessary for furnishing foreign exchange service or for insertion into telephone company common controlled switching arrangements and to file tariffs covering interconnection facilities for all authorized services of the new entrants. It also ordered AT&T to furnish the new carriers facilities similar to those provided to its Long Lines Department on a nondiscriminatory basis.

AT&T subsequently filed an appeal of FCC's order before the United States Court of Appeals, Third Circuit. The court affirmed FCC's decision, including its determination that nondiscriminatory interconnection for foreign exchange and common controlled switching arrangements was required under FCC's Specialized Common Carrier decision. 1/

To comply with FCC's decision in Docket 19896 (46 FCC 2d 413(1974)) AT&T, in May 1974, filed tariffs with FCC. FCC placed these tariffs under investigation (Docket 20099). Before a formal investigation began, however, AT&T expressed a desire to work with the Commission and other parties to resolve the issues involved. After approximately 5 months of negotiations, the parties were able to formulate a settlement agreement. Under the terms of the agreement, the scope of interconnection facilities offered was increased, some new levels of charges were imposed and certain general operating and technical relationships between AT&T and other common carriers were established.

1/Bell Telephone Company of Pennsylvania v. F.C.C., 503 F.2d 1250 (3rd. Cir. 1974).

In its order terminating the investigation, FCC stated that it believed the negotiated settlement afforded "an expeditious and acceptable compromise" on matters which would have required substantial time, effort, and expense to resolve through formal processes. Thus, it agreed to accept the settlement "without necessarily approving it."

Execunet raises new access problems

In mid-1977 an event took place which compounded the need to resolve access questions. This event was the U.S. Court of Appeals for the District of Columbia Circuit's "Execunet" decision. 1/ In essence, this decision allowed competitors to enter all interstate telecommunications markets absent an affirmative FCC finding that restrictions on entry were needed to preserve the public interest.

The court's ruling overturned a previous FCC decision 2/ that MCI Telecommunications Corporation was not authorized to offer its Execunet service, a service similar to MTS, because its authority was limited to the offering of private line services. While the court recognized FCC's authority to place limitations on carrier service offerings, it stated that FCC could not do so without making an affirmative determination that such action was required by the public interest, convenience and necessity. The court noted that FCC had never made any determination as to whether MTS should be open or closed to competition, and, thus, it could not prohibit MCI from offering Execunet.

Following the Execunet decision questions arose, however, as to the existing telephone industry's obligation to provide interconnection for the new other common carrier services. In January 1978, after the Supreme Court had declined to review the appeals court's Execunet decision, AT&T announced that it would cease providing additional connections for Execunet or similar services. Up until then it had furnished MCI with necessary connections for it to offer Execunet. AT&T also filed a petition with FCC calling for FCC to rule that AT&T had no obligation to provide such additional interconnection. In February 1978 FCC issued such a ruling stating that it believed while interconnection for "all specialized interstate communications services" was required under its Specialized Common Carrier Decision as well as under a ruling by the U.S. Court of Appeals for the Third Circuit 3/, these rulings did not encompass the provision of interconnection for MTS and WATS-like services, such as Execunet.

1/MCI Telecommunications Corp. v. F.C.C., 561 F.2d 365 (D.C. Cir. 1977).

2/MCI Telecommunications Corp., 60 FCC 2d 25 (1976).

3/Bell Telephone Company of Pennsylvania v. F.C.C., 503 F. 2d 1250 (3rd Cir. 1974).

In an April 1978 ruling, however, the U.S. Court of Appeals for the District of Columbia found FCC's declaratory ruling to be "in direct and explicit contradiction" with its Execunet decision. The court noted, in this regard, that since the FCC Specialized Common Carrier Decision MCI had met with almost continuous resistance from AT&T in its efforts to provide communications services. It added

> "We had thought that this process finally culminated in our Execunet decision upholding MCI's authority to offer Execunet pending further rulemaking by the Commission. Now, however, we are faced with a new effort by AT&T, with the approval of the Commission, to arrest the development of Execunet service* * *." [1/]

The court went on to state that the only conclusion which would be consistent with its reasoning in the Execunet case was that AT&T was under an obligation to provide interconnections for Execunet. This ruling was interpreted by FCC as requiring, by extension, that all local telephone companies were obligated to interconnect their facilities with those of the OCCs allowing them to offer all authorized services, including services similar to MTS and WATS.

FCC actions to address the court's decision took shape in two closely related but separate proceedings. The first of these was a multifaceted proceeding (Docket 78-72) dealing with various aspects of the MTS and WATS market structure, including determinations of appropriate access conditions and charges. The second proceeding was aimed at developing interim access arrangements until a more long-term approach could be developed. It was commonly known as the ENFIA (exchange network facilities for interstate access) proceeding.

The MTS/WATS proceeding

The MTS/WATS proceeding (Docket 78-72), initiated in February 1978, was intended to determine whether MTS and WATS services should be provided on a sole-source or a competitive basis and to investigate other issues relating to the introduction of competition in such services. This included an examination of changes which might be needed in the traditional procedures used by the telephone industry for integrating their operations and for allocating costs and distributing revenues.

In its initial Notice of Inquiry and Proposed Rulemaking in the proceeding, FCC stated that a specific policy statement was needed regarding the reimbursement interstate services should make to local telephone companies for the use of local plant. FCC noted that although the question of possible subsidies between

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1/MCI Telecommunications Corp. v. F.C.C., 580 F. 2d 590 (D.C. Cir. 1978).

intrastate and interstate services had not been definitively resolved, it had been frequently alleged that MTS was providing a subsidy for local exchange service and that competition in the provision of interstate MTS and WATS could necessitate an increase in local exchange rates. The Commission, thus proposed to determine

--what reimbursement interstate services should make on a cost causational basis;

--what additional charges, if any, should be levied on interstate services to support local exchange services; and

--whether and how such charges could be equitably imposed on all interstate services of all carriers.

FCC also noted that while it had approved jurisdictional separations, division of revenues and settlements had been traditionally devised by the telephone industry. FCC, therefore, proposed to examine the process to determine if it needed to establish cost assignments in the future.

In an August 1979 supplemental notice, FCC, among other things, reiterated the need to investigate issues relating to access arrangements. In this regard, it stated that until nondiscriminatory access arrangements were defined, the operating conditions under which the OCCs competed for intercity business would remain ambiguous, and "the degree of risk associated with investing in competitive service offerings may remain unreasonably high and new entry may be inhibited." As will be discussed in the following sections, FCC actions have yet to create such nondiscriminatory access arrangements.

The ENFIA proceeding

After FCC issued the March 1978 notice in the MTS/WATS proceeding, AT&T filed with FCC a tariff which specified the compensation which the OCCs would have to pay to affiliated AT&T companies to use local exchange facilities for the provision of Execunet and similar services. Numerous comments from interested parties were received concerning the ENFIA tariff, alleging that it was unlawful and anticompetitive, and raising a variety of legal, economic, and policy issues--including issues which FCC proposed to address in the MTS/WATS inquiry. While a ruling on the tariff was still pending, FCC also received a letter from the Assistant Secretary of Commerce for Communications and Information urging it to seek an interim solution to the issues involved in ENFIA through the use of a negotiated settlement, similar to that used earlier in Docket 20099. He believed FCC could avoid duplicating its efforts in the MTS/WATS market inquiry. FCC accepted this suggestion and convened a series of public negotiations among interested parties to attempt to arrive at a "rough justice" interim agreement to the ENFIA problem.

As a result of these negotiations, the parties were able to reach an agreement, which was accepted by FCC in April 1979. The agreement established compensation to be given to local telephone companies for providing network access for OCC services similar to MTS and WATS. It did not, however, cover certain other services such as foreign exchange and common controlled switching arrangements.

The compensation arrangements established in the ENFIA agreement were based on procedures contained in the Separations Manual. The Commission recognized in its order that it did not "have available" all of the relevant costs for the use of local plant by MTS/WATS-like services. Thus, it decided to approve the agreement using a "proxy" based on the subscriber plant factor used in separations to allocate certain nonusage sensitive costs in excess of specifically identifiable costs. As noted on page 163, this factor increases the costs assigned to the services to a level above that which would exist if costs were assigned on a relative use basis. Under the agreement the percentage of the factor assigned to the other common carrier MTS and WATS-like services was to follow the following schedule:

Combined revenues of all specialized common carriers from MTS/WATS-like services	Percentage of the manual's factor
Less than $110 million/year	35
$110 to $250 million/year	45
More than $250 million/year	55

Although the cost assignments to the OCC services under this schedule were less than the assignments to MTS and WATS, FCC noted that the compensation provided by the OCCs for such access would nevertheless be greater than that previously paid. 1/ In explaining why the factor assignment to the OCC services was less than that applied to MTS and WATS, FCC noted at that time that certain capabilities and functions provided by local telephone companies for use in connection with AT&T's MTS and WATS services were not provided in connection with the MTS and WATS-like services offered by competitors. It added that in view of the imprecision of the factor used in the Separations Manual to assign local exchange costs to MTS and WATS,

> "The agreement's proxy for non-specific costs (a changing percentage of the Manual's factor) is no less reasonable than the Manual's similar proxy; it is merely a lower dollar amount, which may reflect lower relevant costs for MTS/WATS-'like' use of exchange facilities than for MTS and WATS uses of the exchange."

1/The two OCCs previously offering MTS and WATS-like services had been connected to local exchanges under local exchange tariffs governing business customers.

The Commission further explained that a phase-in of the cost assignment had been selected so as to assure that the impact of the OCC offerings on existing MTS and WATS ratemaking and revenue division procedures, if any, would remain de minimus during the term of the agreement.

The ENFIA agreement was to remain in effect for up to 5 years. However, for the portion of the agreement involving the proxy to continue beyond 3 years, it specified that FCC must find that such a continuance would be in the public interest and must prescribe an appropriate level of costs above specifically identifiable costs to be assigned to the other common carrier MTS/WATS-like services for the remaining 2 years. The agreement was also to be dissolved if the issues in the MTS/WATS proceeding were resolved or if legislation was enacted which specified the interconnection rights and obligations of the parties.

While the ENFIA agreement did achieve its goal of providing a short-term rough justice solution to the immediate access problems springing from the Execunet decisions, the agreement did not examine the cost assignments to be made to all services which access local exchanges. It applied only to services similar to MTS and WATS. AT&T and General Telephone and Electric were the only telephone companies which were directly party to the agreement and, thus, bound by its conditions. In this regard FCC has received tariffs from other companies which have specified different access charges. Equally important was the fact that the agreement did not address the basic questions discussed on page 161 which must be answered to establish nondiscriminatory, cost based access arrangements. Rather, FCC chose to address these problems through further proceedings--these are still ongoing.

PRESENT FCC PROPOSALS ARE UNLIKELY TO RESOLVE ACCESS QUESTIONS

As part of its MTS/WATS market structure proceeding, in 1980 FCC issued two supplemental notices which are aimed at expanding existing access arrangements and establishing a new access compensation mechanism. While we believe that the proposals contained in these notices are well intended, they do not provide a comprehensive framework from which all access questions can be resolved. Rather, FCC's proposals represent limited, short-term approaches which it apparently intends to use until a long-term solution to the access questions is developed. Given however, the absense of a long-term FCC plan for dealing with access issues and the problems which FCC itself recognizes in its proposals, it appears questionable whether FCC's present proposals represent even the best interim approach for dealing with access problems.

FCC proposes an
access charge system

In April 1980 FCC issued a Second Supplemental Notice of Inquiry and Proposed Rulemaking in the MTS/WATS market structure proceeding, in which FCC proposed the establishment of a system of access charges which would replace the existing compensation arrangements for origination and termination of interstate services. According to the notice, the goal of the proposal was to establish a mechanism which would, to the best of FCC's ability, obtain "a parity which eliminates possible discrimination between OCC and AT&T services, and amongst the different AT&T services, in obtaining interstate access."

FCC stated in the notice that under existing compensation arrangements discrimination could exist among competing interexchange carriers, which could, in turn, result in discrimination among end user rates. This it said would be in violation of section 202 (a) of the Communications Act of 1934. 1/ In this regard, FCC noted that different mechanisms--such as separations and settlements and ENFIA--had evolved for compensating local telephone companies for originating or terminating interstate and foreign telecommunications. Because as noted on pages 163 and 169, the compensation which local exchange operators received through those mechanisms did not reflect cost differences of originating or terminating services, discrimination might result. The Commission also noted that discrimination between message and private line services could result from the use of Separations Manual procedures to allocate local exchange costs.

Because of the likelihood that open entry would be allowed in all interstate services 2/ FCC determined that it must prescribe new arrangements which would lead to the elimination of such discrimination. FCC noted, in this regard, that:

> "There appears to be a broad consensus that a new formula must be developed for allocating interstate exchange plant costs among all interstate services provided by all carriers which produces an allocation more closely aligned with the costs of originating or terminating such services. There also

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1/Section 202 (a) states that it is unlawful for any common carrier to make any unjust or unreasonable discrimination in charges, practices, classifications, regulations, facilities or services in connection with like communication services.

2/FCC's formal determination that competition in all interstate interexchange services was in the public interest was set forth in its August 1980 Report and Third Supplemental Notice of Inquiry and Proposed Rulemaking in the MTS/WATS proceeding.

appears to be a broad consenus that this Commission can and must prescribe the necessary arrangements."

Thus, FCC set forth in the Notice what it termed a "tentative" access charges plan. Under FCC's plan uniform nationwide access charges would be prescribed for four interstate service categories: MTS/WATS, foreign exchange/common controlled switching arrangements, private line and OCC MTS/WATS-like services. 1/ The charges established would determine the amounts which interstate carriers would pay for the use of local exchange plant to originate and terminate services. However, the amounts which each local telephone company received from interstate carriers for their use of local exchange plant would not be directly based on the revenues it collected from access charges. Instead FCC would require that access charges be pooled and redistributed to each local carrier based on its pro rata share of all investment and expense devoted to interstate service. The total amounts to be paid to local telephone companies for using their plant by interstate services would continue to be determined by existing settlements and division of revenues procedures. Thus, the end result would be essentially unchanged in terms of the amounts which local exchange carriers would receive for providing access.

FCC noted that the access charges pooling process it proposed to create would be similar to that used by the telephone industry as part of the separations and settlements process with certain modifications:

--Pooled access charges revenues would be kept distinct from other pooled revenues. 2/

--Pooled access charges would include some services such as MTS/WATS-like service which were not pooled previously.

--The pool would include certain local telephone companies in Alaska, Hawaii, and overseas territories which were not what FCC termed "full partners" in existing arrangements.

Under the plan, the pool would be administered by carriers since neither it nor any other government organization, to the best of FCC's knowledge, had the charter or resources to assume such a function.

1/Access for OCC MTS/WATS-like services is commonly referred to by FCC and other commenting parties as OCC-ENFIA.

2/Since access charge arrangements would apply only to the use of local exchange facilities, separate arrangements would still be needed when two or more carriers provided portions of inter-exchange facilities.

The access charge for each of the four service categories was to be generally based on the use which each service made of local exchange plant. To determine this FCC set forth principles for determining how various plant categories and expenses should be assigned. 1/ Largely these assignments were to be based on relative use of plant by the services. The revenue requirement for each service category was to be computed by adding to this assignment a rate of return equivalent to that which AT&T is allowed on its interstate investment. Access charges for MTS/WATS, foreign exchange/common controlled switching arrangements and OCC MTS/WATS-like services would then be determined by dividing the revenue requirements for the service category by the total holding time minutes of use 2/ for the category to obtain a per minute charge. Access charges for the private line category would be based on a monthly per line charge computed by dividing revenue requirements by the total number of lines. FCC tentatively concluded that such computations should occur monthly.

Although FCC set forth as its goal in its access charges proposal the elimination of discrimination among interstate services in obtaining interstate access, it acknowledged in its Notice several key weaknesses in the plan which precluded the attainment of such a goal. Among the limitations and deficiencies which FCC recognized were

--the lack of adequate information on how different services use local exchange plant,

--the potential for revenue pooling and average access charges to reduce efficiency incentives,

--the plan's reliance on separations principles to determine aggregate plant assignments to interstate services, and

--the fact that the plan did not and could not include access charges for intrastate toll services.

FCC recognized that while the service categories used local exchange plant elements differently, 3/ it was unable to determine how costs were affected by these differences. For example, FCC

1/We discuss this assignment more thoroughly in appendix XII.

2/Holding time is the time in which an item of telephone plant is in actual use either by a customer or an operator. For example, on a completed call it includes conversation time as well as other time in use.

3/More specifically, certain portions of investment in subscriber line outside plant, station equipment, nontraffic sensitive central office switching equipment and subscriber line exchange circuit equipment.

said it was unable to determine the cost difference in the use which private line and message services make of nontraffic sensitive central office switching equipment or circuit plant. Further, FCC noted that customers could use private branch exchanges (customer operated switchboards) to "patch" private line calls into local exchanges. However FCC stated that it did not know to what extent this took place and, therefore, what costs were involved.

Given these uncertainties, FCC justified its proposal to allocate such plant on the basis of holding time minutes of use on the grounds that (1) the differences between service categories were "far less significant" than their similarities and (2) since cost differences could not be quantified, such an approach was "the most reasonable solution available." FCC added, however, that before adopting a final plan it would consider evidence demonstrating that different access categories use plant differently, any cost differences could be quantified, and such cost differences should be taken into account in access charge allocations. FCC also noted some change in access charge categories might be needed to better reflect cost differences.

In noting that pooled average access charges could reduce efficiency incentives for local exchange carriers, FCC recognized that a system in which each carrier received directly the access charges paid for the use of its exchange plant--rather than through the pooling system FCC proposed--would provide efficiency incentives. FCC believed, however, such a plan could not be implemented quickly. In this regard FCC said

> "An arrangement of this kind, however, would almost certainly require a classification scheme for exchange plant based on cost* * * Considerable time and effort would be required to develop classifications that would identify exchanges that should have comparable costs under equally efficient management. Even if such categories could be established quickly, the development of data that would be required to prescribe multiple access charge schedules would delay the implementation of the initial access charges. As already noted, we believe it imperative that we move forward immediately to end discrimination amongst interstate services. Accordingly, in the interest of dispatch, we are tentatively proposing uniform nationwide access charges and an exchange revenue pool."

FCC also noted that it had received comments questioning its use of existing separations procedures for access charges purposes. As FCC itself noted, the Separations Manual was not designed for the purposes of allocating costs among interstate services. Further, as noted on page 163 questions exist as to whether use of Separations Manual procedures results in a subsidy of intrastate services by interstate services.

FCC recognized that a number of parties proposed that an FCC-State Joint Board be convened to revise the Separations Manual either before or in conjunction with the formulation of access charges, but rejected such an approach. Instead it decided to establish a separate proceeding in which a Joint Board would investigate and revise exchange plant allocation provisions of the Separations Manual and go forward with its plan to prescribe a new access charges system without waiting for Separations Manual revisions. 1/

FCC also recognized that it was limited by the Communications Act of 1934 to the regulation of interstate and foreign services. Therefore its access plan must be restricted to such services. Access charges for intrastate toll services would be left to the determination of State commissions which could, if they chose, use FCC's plan as a model.

FCC calls for additional negotiations to improve access arrangements

In August 1980, FCC issued its Report and Third Supplemental Notice of Inquiry and Proposed Rulemaking in the MTS/WATS proceeding. In this notice, FCC recognized that while it had in its second supplemental notice proposed a system of access charges, that proposal would not resolve all access questions. In this regard, FCC noted that certain differences in the physical access arrangements provided to OCCs and telephone companies continued to exist. Thus it called upon the carriers to resume negotiations to work out more satisfactory arrangements.

Although the U.S. Court of Appeals' April 1978 decision, as interpreted by FCC, required telephone companies to provide local exchange access to OCCs, problems remained concerning the precise type of access to be offered. As FCC noted in its ENFIA order, the access provided OCCs for their MTS and WATS offerings continued to be different than that provided for traditional MTS and WATS offerings. Generally, such services were provided access under the arrangements which had been developed under the 1975 settlement agreement for foreign exchange and common controlled switching arrangements services.

The OCCs maintained, however, that the arrangements provided under this settlement agreement prevented them from making their services as equivalent to MTS as they wished. For example, they noted that because of differences in interconnection, customers using OCC MTS and WATS-like services may have to "dial" 12 or more additional digits to place a long distance call than they would placing an ordinary MTS long-distance call. Subscribers to these OCC services also cannot use rotary dial telephones to place

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1/In June 1980 FCC convened a Joint Board to investigate this and other matters (Docket 80-286).

calls unless they obtain special auxiliary equipment. Various other services were also not provided to them.

To explore methods for dealing with such differences in interconnection and alternative arrangements for providing future access for OCC MTS and WATS-like services, FCC had in October 1979 convened a series of negotiations known as the ENFIA II negotiations. After 4 months, however, these negotiations had adjourned without an agreement being reached.

In its August 1980 Notice, FCC made reference to the continuing problems in assuring equivalent access for all parties to local exchange facilities and the ENFIA II negotiations failure to resolve them. FCC continued, however, to favor a negotiated approach. FCC noted that under section 201(a) of the Communications Act it has the power to prescribe access arrangements, but did not desire to make prescription of physical access arrangements "the norm." Further, FCC stated that it did not believe it would be desirable for it to prescribe a single access arrangement because a requirement calling for identical access at identical charges was "probably too simplistic" and a more flexible approach was needed in which access arrangements and charges could be modified to meet service needs.

Recognizing that its past approach had relied on carrier negotiations to derive access arrangements, FCC said it saw no reason to depart from such an approach. FCC added that the adjournment of the ENFIA II negotiations was not an impasse which necessitated a proceeding to prescribe access arrangements. It stated, in this regard, that negotiations had ceased because the participants did not appear ready to proceed further until FCC had resolved certain questions including its MTS/WATS entry policy. 1/ Since FCC in the third supplemental notice, in essence, affirmed a policy of open entry in the MTS/WATS market, it stated its confidence that carriers would proceed in good faith to work out short-term and long-term solutions to the access arrangements problem. FCC noted, however, "if that confidence proves to be unwarranted, this Commission will institute appropriate proceedings." On April 29, 1981, FCC held a meeting in which AT&T, OCCs and other interested parties discussed the possibility of resuming negotiations on access arrangements. This meeting followed a proposal by AT&T to expand existing access arrangements for MTS/WATS-like services.

Present FCC proposals are unlikely to create nondiscriminatory access conditions

In its Second and Third Supplemental Notices of Inquiry and Proposed Rulemaking in the MTS/WATS Market Structure proceeding,

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1/As noted on page 167, a primary reason for the commencement of the proceeding was to determine entry policy in the MTS/WATS market.

FCC has set forth proposals to establish a new access compensation mechanism and to broaden existing interconnection arrangements. Given the limitations contained in the access charges proposal and FCC's past experiences in using negotiations, it does not appear that these initiatives will result in the realization of equitable nondiscriminatory access conditions.

While the need to replace existing compensation mechanisms with a system which can ensure fair, nondiscriminatory access conditions is unquestionably a vital step in the transition to a fully competitive telecommunications marketplace, we believe that any such short-term plan should be formulated in the context of this long-term approach to the problem and should facilitate the transition toward a more lasting solution. We also believe that any interim proposal should be mindful of the effects on communications suppliers and users which may result from a "rough justice" allocation of costs. Further, the interim plan should avoid, to the greatest extent possible, the creation or continuance of conditions which will further or expand opportunities for the exercise of anticompetitive behavior or create incentives for inefficiency.

FCC has in its Second Supplemental Notice set forth a tentative design for an interim access charges mechanism. It does not, however, specify, either in the notice or elsewhere, what long-term approach it plans for addressing all access related questions or how its interim proposal fits into such a long-term approach. Regarding the development of a long-term, comprehensive access charges approach, the National Telecommunications and Information Administration noted in its comments on FCC's proposal that it was its understanding that the industry expected the time and effort required to implement the Commission's tentatively proposed pooling arrangement to be substantial. This it said

> "* * * combined with the inertia created by initial adoption of the tentatively proposed pooling arrangement would, we fear, make it very difficult to alter significantly such an arrangement once it is in place."

In its access charges proposal FCC also recognized that it does not know the relevant local exchange costs which should be borne by various interstate services. Based on our review of the comments which were submitted in response to FCC's proposal, it appears that a substantial shift in the assignment of local exchange costs among interstate service categories could occur if its plan were enacted as presently outlined. While a detailed study of local exchange plant costs could ultimately warrant a major redistribution of costs, we believe FCC must be mindful of the economic consequences which may be produced by any interim rough justice reassignment. In this regard, a consumer organization

commenting on FCC's proposal, noted that, as outlined, it could lead to a dramatic increase in access charges for private line and MTS/WATS-like services, which would in turn, narrow opportunities for market entry because of increased capital requirements and lower return on investment. The National Association of Regulatory Utility Commissioners also expressed reservations on the effects of FCC's proposal--noting the uncertainties which exist in determining the local exchange cost assignments which should be made to interstate services and the need to ensure fair treatment of all carriers so as to preserve the "continued viability of our nationwide communications network."

FCC's proposal to establish an industrywide pooling arrangement has also led to concerns that such an arrangement may facilitate the opportunities for the exercise of anticompetitive behavior by dominant carriers and promote inefficiency and distort entry conditions at the local exchange. In this regard, particular concern exists that the pooling arrangement proposed by FCC would place the dominant interstate carrier on the inside, as pool administrator, and leave competitors on the outside. Along these lines, the National Telecommunications and Information Administration also expressed concern that the pooling arrangement would expand and institutionalize features of the existing settlements process which are least compatible with the development of a freer, more competitive telecommunications market. In addition, as FCC has recognized, the use of a pooling arrangement using average nationwide access charges would tend to promote economic inefficiency since access charges would be overpriced in low-cost areas and underpriced in high-cost areas. This could in turn, insulate local exchange carriers with high costs from competition.

We also have reservations concerning FCC's reliance on the use of negotiations as a means to resolve existing access arrangements problems--as is proposed in its Third Supplemental notice. In general, FCC's approach appears to be based on two primary reasons. First, it believes that flexible access charges arrangements are needed, which can be revised as conditions change. Thus, it declines to prescribe any single access charges arrangement which might create "a regulatory straightjacket." Secondly, the Commission expressed hope that the ENFIA II negotiations will resume, in spite of their past failure to produce an agreement.

We fully endorse the Commission's desire for the development of flexible access arrangements. The development of a complete "menu" of local access arrangements at compensatory prices from which interexchange carriers can choose and which can be modified as conditions change, is likely to produce the optimum benefit both to communications suppliers and consumers. While the involvement of communications firms in the formulation of such arrangements will undoubtedly be needed, given the importance of this task, we question whether negotiations should be relied on to produce such a result. At best, it appears the ENFIA negotiations will produce a new interim solution which will still leave access questions unresolved.

In this regard, we believe the biggest problem with FCC's present proposals is that they do not provide a comprehensive framework from which all of the basic access questions can be addressed and long-term solutions developed. For example, they do not directly deal with the issue of what changes in industry structure and intercompany arrangements may be needed to ensure nondiscriminatory access; they do not--and presumably cannot--deal with access for intrastate toll services; and they do not directly address the issue of what continuing Commission involvement is needed to ensure the maintenance of nondiscriminatory access conditions and the rapid resolution of access-related problems. To resolve all of the basic access questions, we believe legislation is needed.

LEGISLATIVE CHANGE REPRESENTS THE MOST COMPREHENSIVE APPROACH FOR ADDRESSING ACCESS QUESTIONS

During the past decade FCC has taken actions, and is presently proposing further actions, to address problems relating to both access arrangements and access charges. However, FCC's proposals as it has recognized do not and, in some respects, cannot address in a comprehensive manner all access-related questions.

To develop a comprehensive system for ensuring equivalency of access to local exchange facilities by all interexchange carriers, we believe that the Communications Act of 1934 needs to set forth the basic framework to ensure the existence of fair, nondiscriminatory access arrangements and charges. Important elements to be considered in establishing this framework include the following:

--FCC has regulatory authority over all interexchange facilities and services whether or not they cross State boundaries,

--All carriers who control local exchange facilities offer access to all interexchange carriers or other customers on a fair, nondiscriminatory basis. To ensure this, rates, terms, and conditions relating to the offering of local exchange access services would be filed under tariff and mechanisms created which would allow FCC to promote compliance.

--Procedures are established which can be used to provide, on an interim basis, funds obtained from interexchange service revenues which would offset drastic increases in local exchange costs which may occur during the development of an access charges system.

--A Federal-State joint board created to assist FCC in determining the appropriate costs for access services and carrying out other tasks attendant to the development of an access system.

Basic actions and conditions needed to ensure fair, nondiscriminatory access

As long as the present situation exists under which interexchange services are divided between FCC regulated interstate and State regulated intrastate services, the formulation of a fully workable access charges system will be made difficult--since determinations of access charges may differ from jurisdiction to jurisdiction. Placing the development of access charges for all interexchange services under FCC's jurisdiction will consolidate within one agency responsibility for the development and maintenance of a system which can ensure nondiscriminatory access for all interexchange services. States would retain jurisdiction over local service, except for those facilities and service offerings used primarily for the origination and termination of interexchange traffic.

Legislatively requiring that access be offered under tariff and empowering FCC with additional regulatory tools to promote compliance could assure that all local exchange carriers offer a full array of access services to all interexchange carriers and other customers on a fair, non-discriminatory basis. Such an approach would, in our view, open access arrangements to greater public scrutiny and help alleviate concerns regarding competitive fairness which exist under separations and settlements procedures. These tariffs should set forth access terms, conditions and rates, that apply to all carriers and all service offerings, including those cases in which a carrier offering interexchange services obtains access through an affiliated local exchange company.

Because the filing of access tariffs by each of the approximately 1,500 telephone companies in the United States would place a substantial burden on FCC, we believe that several actions can be taken. FCC needs to be given authority to delegate responsibility to State public utility commissions for the approval of tariffs submitted by small telephone companies, under rules and guidelines which it promulgates. Further, carriers need to be allowed to file tariffs using average schedules or to participate in voluntary pooling arrangements under rules developed by FCC, to the extent that such actions are consistent with the development and preservation of fair, nondiscriminatory access conditions.

Beyond a tariff provision, additional tools could also increase FCC's ability to promote compliance with the nondiscriminatory access requirement. One such tool would involve authorizing FCC to adjust access fees so as to provide incentives for local exchange carriers to provide nondiscriminatory interconnection.

Procedures are also needed which can be used to offset, on an interim basis, any drastic increases in local exchange costs which may result from the implementation of an access charge

system. 1/ During recent years the relative amount of local exchange costs assigned to interstate services has gradually increased, giving rise to the notion that rates for such services subsidize intrastate rates, and in particular local exchange rates. The existence and magnitude of any such subsidy, however, is unclear. In this regard, some parties have argued that while the interstate cost burden has increased, no subsidy exists since much of the local exchange plant was designed exclusively for the provision of long distance services. A detailed cost study will apparently be needed to determine what local exchange costs interexchange services should ultimately bear and whether any subsidy presently exists.

Ultimately, we believe that the access charges for interexchange services need to be strictly based on cost. However, if it is determined that the cost burden presently placed on such services through the separations process exceeds the "proper" cost assignment and a shift to a cost-based assignment would result in a substantial increase in local rates, it may be necessary to continue some subsidization of local services on an interim basis. Thus, procedures should be established which can ensure the equitable provision of such a subsidy, if it is found to be necessary. One possible mechanism for providing this subsidy would be the creation of a pool which would be used to collect a surcharge applied on a nondiscriminatory basis to interexchange access charges. These surcharges would then be redistributed to certain local exchange carriers on the basis of need. The amounts of such surcharges should be determined by FCC. In addition, payments to local carriers from the pool should only be made under congressionally mandated guidelines and on approval by FCC of applications from carriers which clearly indicate the need for and uses to be made of such funds. In general, we believe that such subsidies should be directed primarily at small local exchange carriers who are least likely to be able to adjust to increased cost burdens without significantly raising local rates.

We believe that a legislatively established FCC-State joint board will also facilitate the development of a comprehensive access system by providing State public utility commissions a voice in determining the outcome of decisions which will affect services subject to their regulatory jurisdiction. In this regard, the Joint Board needs to be involved in determining local exchange boundaries, apportioning local exchange costs between exchange and interexchange operations, making changes in separations and settlements procedures to the extent necessary to facilitate transition to an access charges system, and establishing and overseeing

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1/As noted on page 172, the access charges proposal set forth by FCC in the second supplemental notice of the MTS/WATS inquiry would continue to be based on existing separations and settlements procedures and, thus, should in and of itself, have no direct effect on local exchange rates.

the management of the subsidy mechanism. We believe, however, that FCC needs to have the ultimate responsibility for approving the assignment of costs to interexchange services, establishing schedules of access surcharges, approving applications for subsidy payments and taking actions to ensure the existence of nondiscriminatory access arrangements.

Steps needed during transition to a comprehensive access system

As is clear from the magnitude and complexity of the tasks we have described, the transition to a fully workable comprehensive system for interexchange access to local exchange facilities is likely to be long and arduous. While no precise estimate of the time frame during which such a system could be established exists, a minimum of several years would not be surprising. In the interim, we believe that establishing procedures which would replace the existing compensation arrangements with a unified, tariff based system may be beneficial. However, such a system should be established in accordance with the criteria we noted on page 177.

To better determine the need for and desirability of establishing some interim solution before a long term access system is established, we believe, however, that more information is needed. Thus, we believe that following the enactment of legislation, the Congress needs to require within a short timeframe (6 months would seem reasonable) FCC, in consultation with the joint board to develop a plan which will set forth the steps needed to develop a fully workable access system and specify the timeframes needed for its implementation. In light of this plan, FCC should be in a better position to determine whether interim action is needed and how any such action proposed will facilitate or hinder the development of a long-term access system.

The tasks which must be undertaken to develop a workable access system are also likely to be resource intensive. For example, FCC and the Joint Board will be responsible for, among other things, redefining jurisdictional boundaries, determining cost assignments, processing access tariffs, administering subsidy procedures, if necessary, and taking action to detect and prevent the recurrence of access discrimination. Once a workable access system is fully developed and in place, the need for regulatory involvement will undoubtedly decline. However, during transition, we believe that it is important that adequate resources be assigned to carry out the tasks needed to develop a comprehensive access system and thereby facilitate the establishment of a fully competitive environment.

CONCLUSIONS

Since competition was first allowed in interstate telecommunications services, a decade ago, FCC has set forth the requirement that all carriers offering authorized interstate

communications services be allowed access to local exchange facilities on a nondiscriminatory basis. During the period since then, FCC has taken various actions aimed at correcting discrimination problems involving both access arrangements and charges. However, problems continue to exist.

As part of its MTS/WATS market structure proceeding, FCC has proposed further actions in which it intends to improve existing access arrangements and establish an interim access charges system. FCC's actions do not, however, provide a framework from which the following questions can be resolved:

--What types and levels of interconnection should telephone companies be required to provide to competitive carriers?

--What rates should be charged to competitors for access to local exchanges?

--What are the effects of competition on any subsidies which may have been provided between interstate services and intrastate services?

--Can nondiscriminatory access conditions be assured without major changes in telephone industry structure and procedures?

We believe that congressional action is needed to address these questions. In this regard, we believe that by amending the Communications Act of 1934 to establish the basic conditions and mechanisms to achieve nondiscriminatory access arrangements and charges, the Congress will take a necessary step toward establishing the existence of a fully competitive communications environment.

While the Congress is taking the necessary steps to enact such legislation, we also believe that FCC should work in concert with State commissions, toward formulating a long-term plan which can be used to effectively discharge the responsibilities which will be assigned to it by the Congress. For example, it should work toward establishing timetables for revising jurisdictional boundaries, formulating costing principles and conducting cost studies to determine access costs for interexchange services, and making necessary changes in tariffs and accounting procedures. This should not only enable FCC to "hit the ground running," once legislation is passed, but also place it in a much better position to evaluate the desirability of proceeding further with interim actions such as it has proposed. This would be in addition to our recommendation in chapter 6 that FCC initiate a proceeding to evaluate the need for requiring dominant interexchange carriers to establish separate subsidiaries for those operations, if they are also monopoly providers of local exchange services.

RECOMMENDATION TO THE CONGRESS

We recommend that the Congress amend the Communications Act of 1934 to establish the basic framework necessary to create the existence of nondiscriminatory access conditions. In doing so the Congress should consider the following provisions:

--FCC be given regulatory authority over all interexchange telecommunications facilities and services.

--Access to local exchange facilities to be offered to all carriers and other customers under nondiscriminatory rates, terms, and conditions.

--Rates charged for local exchange access be assigned to interexchange services on the basis of cost.

--Access services to all interexchange carriers, including affiliated companies, would be filed under tariff.

--FCC be empowered to prescribe access rates to provide carriers with the strongest possible incentive to provide nondiscriminatory access as well as to take other actions necessary to end access discrimination.

--Procedures to be established which could be used on an interim basis to provide funds from interexchange services which could be collected if needed to offset cost increases which arise as the result of the implementation of an access charges system. Such funds would be distributed only to local exchange carriers upon approval of applications by FCC.

--A Federal-State Joint Board be established to assist FCC with the development of an access charges mechanism.

--FCC, in consultation with the Joint Board file a long-term plan setting forth the steps which it proposes to develop an access system, including the need for and outline of interim action before a permanent system is developed.

RECOMMENDATION TO THE CHAIRMAN, FCC

We recommend the Commission initiate a project within the Common Carrier Bureau to develop a long-term plan for carrying out the tasks necessary to establish an access charges system in light of the framework described in this report. It should use this plan as a basis for evaluating the need for and desirability of any interim action which it proposes.

KEY SECTIONS OF THE COMMUNICATIONS ACT OF 1934

RELATING TO DOMESTIC COMMON CARRIERS

Section	Subject	Key provisions
1	Purpose of act	Created FCC for regulating interstate and foreign commerce by wire and radio. Set policy goals for regulation.
201(a and b)	Common carrier service & charges	Under section 201(a) carriers must furnish service upon reasonable request and must establish physical connections and through routes with other carriers if FCC determines this is in the public interest. Under section 201(b) all charges, practices, classifications, and regulations must be just and reasonable.
202(a)	Discrimination	Section 202(a) bans unjust or unreasonable discrimination by carriers in charges, practices, classifications, regulations, and facilities.
203(a and b)	Schedules of charges	Section 203(a) requires every carrier to file with FCC public tariffs. Under section 203(b) no changes may be made to these tariffs without 30 days notice.
204	Hearings on lawfulness of new charges	FCC may conduct a hearing on the lawfulness of a tariff filed with it. Pending a hearing, FCC may also suspend the tariff for 5 months; however, after 5 months the tariff will go into effect. In the case of an increased charge, FCC may order a refund after the hearing.
205(a)	FCC authority to prescribe rates	After a hearing at which FCC determines a charge violates the act, it may prescribe a just and reasonable charge.

Section	Subject	Key provisions
214(a, c and d)	Facilities authorizations	Under section 214(a) the construction or extension of communications lines may not take place until the carrier receives from FCC a certificate that the public convenience and necessity require the carrier's action. Section 214(c) gives FCC the power to issue the certificate as applied for, to refuse to grant it, or to attach conditions which FCC feels the public convenience and necessity require. Under section 214(d), FCC may also require carriers to provide facilities which are reasonably required by the public convenience and necessity.
218	Inquiries into management	FCC may inquire into the management of the business of all carriers. It may also obtain from the carriers full and complete information necessary to enable it to perform its duties under the act.
220(a and b)	Accounting practices	Under section 220(a), FCC may prescribe all accounts and records kept by carriers. FCC may also prescribe the depreciation practices used by the carriers under section 220(b).
221(c)	Special provisions for telephone companies	After proper hearing and notice FCC may classify the property of telephone carriers and determine what property is used in interstate telephone service.

FEDERAL, STATE, AND PRIVATE ORGANIZATIONS INTERVIEWED

We obtained information from the following individuals and organizations or their legal representatives.

Federal Government

National Telecommunications and Information Administration
Department of Justice
Office of Technology Assessment
Congressional Budget Office
Federal Energy Regulatory Commission
Federal Trade Commission

State Government

Michigan Public Service Commission
State of New York Public Service Commission
Public Service Commission of Wisconsin

Common carriers

American Telephone and Telegraph Company
The Western Union Telegraph Co.
MCI Telecommunications Corporation
Southern Pacific Communications Co.
GTE-Telenet

Associations

Ad Hoc Committee for Competitive Telecommunications
Ad Hoc Telecommunications Users Group
North American Telephone Association
National Association of Regulatory Utility Commissioners
National Citizens Committee for Broadcasting
Organization for the Protection and Advancement of Small Telephone Companies
Public Citizens Congress Watch
U.S. Independent Telephone Association

Former FCC officials and academics

Walter Bolter--Former Chief of FCC's Economics Division, Common Carrier Bureau
Walter Hinchman--Former Chief of FCC's Common Carrier Bureau
David Irwin--Former Chief of FCC's Policy and Program Planning Division, Common Carrier Bureau
Harry Trebing--Director, Institute of Public Utilities, Graduate School of Business Administration, Michigan State University

APPENDIX III

CONSULTANTS EMPLOYED

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CHRONOLOGY OF KEY FCC DECISIONS

REGARDING COMPETITION

TERMINAL EQUIPMENT DECISIONS

Traditionally, telephone company tariffs prohibited customers from using any device not supplied by the company in connection with the services it provided. In the 1956 Hush-A-Phone (Hush-A-Phone Corp. v. United States, 238 F. 2d 266 (D.C. Cir. 1956)), case this prohibition was first challenged.

The Hush-A-Phone was a plastic cup-like device placed over the handset to facilitate private conversations. In reaching its decision that AT&T acted unlawfully by disallowing the Hush-A-Phone's use, the U.S. Court of Appeals established the principle that telephone subscribers have a right to use the telecommunications system in ways which are privately beneficial but which do not harm the system's integrity, and that tariffs which interfere with this right are unreasonable.

After the Hush-A-Phone decision, the industry made some changes in its tariffs, but the general prohibition against connective customer-provided terminal devices continued. In its 1968 Carterfone (13 FCC 2d 420 (1968)) decision, FCC ruled that the existing tariff provisions were unlawful because they violated the consumer's right to interconnect the Carterfone device. FCC found that this device which would couple a mobile telephone to the telephone system improved the system's utility and did not harm the system's integrity. FCC also made it clear that its decision was not limited to the Carterfone device per se, but rather constituted a general policy.

After the Carterfone decision, the carriers filed tariffs allowing interconnection if a connecting arrangement provided by the telephone company was used to protect the telephone system from harm. In 1972, these tariffs came under additional scrutiny, with FCC recognizing that the carrier-supplied connecting arrangement could impose a substantial and possibly discriminatory burden on consumers installing their own terminal equipment. This potential for discrimination became very clear when consumers purchased their equipment from the same firms which supplied the carriers, with the consumer-supplied equipment requiring a connecting device while the identical carrier-supplied equipment did not.

As a result, FCC in 1972 initiated Docket 19528 to investigate alternative interconnection methods. A Federal-State Joint Board was instituted to make recommendations to the Commission. Based on the Joint Board's recommendations, the Commission in November 1975 established a registration program for ancillary and data terminal equipment. The registration program provided

certain technical requirements to ensure that the equipment would not harm the system. Terminal equipment which met these requirements was registered and allowed to be used.

In March 1976, FCC extended the registration program to main station telephones, key telephone systems, and private branch exchanges. The carriers subsequently appealed this action. The Fourth Circuit Court of Appeals affirmed all FCC's decisions in this area, and in October 1977 FCC's registration program became effective. 1/ Accordingly, telephone subscribers who have the right under Carterfone to provide and interconnect their own terminal equipment may now do so without a carrier-supplied connecting arrangement, provided such equipment is registered pursuant to the Commission's rules and the telephone company has been properly notified.

The primary rationale behind these decisions was the consumer's right to interconnect with the system devices of his or her own choosing which increased the system's utility to him or her without harming the system's integrity. Issues of natural monopoly in the terminal equipment sector were not raised because it is generally recognized that economies of scale are not prevalent in this sector.

With regard to system integrity, FCC felt that the registration program was sufficient to ensure that the system would not be harmed and that consumer's rights would not be violated by the interconnection of customer-provided devices.

SPECIALIZED PRIVATE LINE SERVICES DECISIONS

Before the 1960s, only the established carriers and Western Union offered private line services, with those services generally being either telegraph or voice grade circuits. The advent of computers and the electronics revolution, in conjunction with changing social and economic developments and needs, created new demands for specialized intercity communication services. In addition, the introduction of microwave technology promised to lower the costs of intercity transmission and to make it economically feasible for firms other than the established carriers to construct microwave transmission networks to serve the growing demand.

The first FCC decision to respond to these demands was the 1959 Above 890 Decision (27 FCC 359 (1959)), which allocated part of the microwave spectrum to private business users. In issuing this order FCC reasoned that an adequate number of frequencies existed in the microwave spectrum to satisfy both the common

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1/North Carolina Utilities Commission v. F.C.C. 537 F. 2d 787 (1976), cert. denied 429 U.S. 1027 (1976).

carriers' and private systems' future needs. In addition, the Commission determined that there was not much likelihood that the common carriers would suffer any adverse economic effects from the entry of private communications systems.

Despite this decision, a growing demand for specialized intercity communications systems continued, as a result of the growth of computer technology. To evaluate this demand the Commission initiated a rulemaking proceeding which culminated in the Specialized Common Carrier Decision (29 FCC 2d 870 (1971)). This decision established a Commission policy favoring new entry in the specialized communications field.

As a rationale for this decision, the Commission argued that the specialized common carriers were not entering a fixed homogeneous market with the same services but rather were seeking to develop new, more heterogeneous markets. As a result, they could be expected to satisfy demands which were not being met by existing carriers and expand the size of the aggregate telecommunications market.

In response to these decisions, the argument of a natural monopoly in intercity transmission was raised. The Commission noted that economies of scale largely occur in markets where the technology is stable and the market is homogeneous. In contrast, FCC argued that the market for specialized communications is characterized by rapidly changing technology and diverse consumer demands.

In its 1972 DOMSAT Decision (35 FCC 2d 844 (1972)), FCC extended its multiple entry policy for licensing specialized common carriers using microwave systems to licensing specialized common carriers seeking to use domestic satellite systems. As a rationale for this policy the Commission concluded that a competitive supply market would be more dynamic and would encourage service and technical innovation as well as provide an impetus to minimize costs and prices to the consumer.

In addition, FCC permitted the establishment of "value-added" carriers in 1973 and authorized the resale and sharing of certain private line telecommunications services in 1976.

Value-added carriers lease channels from other carriers and then add extra services or "value" before reselling them to the final consumer. Resale is the subscription to communications services and facilities by one entity with the subsequent resale to the public for profit. Sharing is a nonprofit arrangement in which several users collectively use and pay for communications services and facilities provided by existing carriers.

THE EXECUNET DECISION--OPENING MESSAGE SERVICES TO COMPETITION

In September 1974, the MCI Telecommunications Corporation, a specialized common carrier, filed a tariff application with FCC to provide a service known as Execunet. With Execunet, a customer can dial a local MCI number and be connected through a microwave system to another telephone in another city served by the firm.

After several procedural disputes and an informal letter to MCI in July 1975 rejecting its tariff, FCC in July 1976 issued an extensive final opinion finding that MCI was not authorized to offer Execunet. In that opinion, the Commission relied on its Specialized Common Carrier Decision, pursuant to which most specialized carrier facilities authorizations have been issued. FCC felt that the Specialized Common Carrier Decision dealt with only private line services, which specialized carriers like MCI had applied to provide, and did not open other areas such as MTS/WATS to competition.

FCC found that Execunet was not a private line service, but rather had the essential characteristics of the MTS/WATS service offered as a monopoly by AT&T. Therefore, FCC rejected MCI's Execunet tariff as unlawful because it violated FCC's Specialized Common Carrier Decision.

MCI subsequently appealed FCC's decision to the U.S. Court of Appeals for the District of Columbia. In its July 1977 decision 1/ the court said that while FCC had the statutory authority to authorize competition in limited areas with restrictions, section 214 (c) of the Communications Act required FCC to make an affirmative determination that the public interest requires such restrictions. Regarding FCC's Specialized Common Carrier Decision, the court said FCC had not properly made such a determination. Instead, the court said:

> "* * * it appears that the Commission saw benefits accruing to the public from the services which were before it. In granting the facilities authorizations on the basis of that public interest finding, the Commission did not perhaps intend to open the field of common carrier communications generally, but its constant stress on the fact that specialized carriers would provide new, innovative, and hitherto unheard-of communications services clearly indicates that

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1/MCI Telecommunications Corp. v. F.C.C. 561 F. 2d 365 (1977), cert. denied 434 U.S. 1040 (1978). Hereinafter referred to as the Execunet Decision.

> it had no very clear idea of precisely how far or to what services the field should be opened. * * * There being no affirmative determination of public interest need for restrictions, MCI's facility authorizations are not restricted and therefore its tariff applications could not properly be rejected."

In reaching its decision, the court did not determine whether the competition in monopolized long-distance service like that posed by Execunet was in the public interest. That determination was left to the Commission. In addition, it did not disturb FCC's finding that Execunet was not a private line service. In January 1978, the Supreme Court denied FCC's petitions for review.

Following the Supreme Court's action, AT&T applied to FCC for a declaratory ruling to clarify and define precisely what obligations AT&T had regarding interconnection with MCI for Execunet. In its ruling FCC said that AT&T's interconnection obligations were only for private line services and that the Commission had not made the affirmative public interest finding required by section 201(a) regarding the interconnection of Execunet.

MCI subsequently appealed this ruling and filed a motion to require compliance with the court's first Execunet mandate. FCC opposed MCI stating that the first mandate was not related to interconnection. Rather, the court had found only an error in FCC's decisions regarding section 214.

On appeal, however, the court said that FCC read its original decision too narrowly and that its decision carried a broad interconnection mandate. 1/ In August 1978, FCC filed for review of this most recent decision with the Supreme Court. In December 1978, the Supreme Court denied FCC's petitions for review of the second Execunet Decision.

In response to the Execunet decisions, FCC in February 1978 began a proceeding to decide whether long distance service--both MTS and WATS--should be provided as a monopoly by AT&T or should be open to competitive entry. In August 1980 FCC decided not to create a monopoly in these services stating that they were convinced that competition in all interstate interexchange services was in the public interest and would further the goals of the Communications Act.

1/MCI Telecommunications Corp. v F.C.C., 580 F 2d 590 (1978), cert. denied 439 U.S. 980(1978), also referred to as the Execunet II decision.

WESTERN UNION PUBLIC MESSAGE TELEGRAPH SERVICE DECISION

Unlike AT&T, Western Union had enjoyed a de jure monopoly of telegraph services. In March 1978, FCC began an inquiry to determine whether Western Union should retain its monopoly. This action was prompted by the application of Graphnet--a value-added carrier--to obtain permission to deliver international public messages domestically. To approve Graphnet's application FCC had to determine whether entry should be allowed into domestic public message telegraph service. In January 1979, FCC decided to end Western Union's monopoly and allow competitive entry because the service was currently in decline and entry would improve the services offered in the public message market.

PRINCIPLES OF RATE OF RETURN/RATE BASE REGULATION

DETERMINING A FAIR RATE OF RETURN

Under rate of return/rate base regulation firms are entitled to earn a fair return on property which they employ in providing service. This return is intended to compensate investors who have contributed funds to finance the firm's operations.

According to guidelines issued by the Supreme Court, a firm's allowed rate of return should be equivalent to that earned by other firms which experience comparable business risks. 1/ The rate of return is also to be (1) sufficient to assure confidence in the firm's financial condition and (2) adequate, under efficient and economical management, to maintain its credit and enable it to attract money to finance necessary operations. The Supreme Court has also held that a firm is entitled to the constitutional protection afforded by the "due process" and "equal protection" requirements, to ensure that its earnings are not unduly and unjustly restricted.

In determining a firm's rate of return, a regulatory agency must consider three main factors--the firm's cost of debt, its cost of equity, and its capital structure. The cost of debt is the interest the firm must pay on bonds and loans. The cost of equity is the return which a firm must offer to attract and maintain both preferred and common stockholders. The capital structure is the dollar mix of debt to equity in terms of the firm's total cost of capital.

The firm's rate of return can, accordingly, be computed by using a weighted average of its various capital costs. The following example illustrates the computation for a hypothetical company with a $1 billion capital structure; long-term debt costs of 9 percent, preferred stock costs of 10 percent, and common stock costs of 15 percent. Based on the proportion of each component in the capital structure, the weighted cost of capital is 11.5 percent.

1/See for example Bluefield Water Works & Improvement Co. v. Public Service Com. of West Virginia, 262 U.S. 679, 692-93 (1923).

Example of Weighted Cost of Capital Computation

Capital structure				
Component	Amount	Percent of capital structure	Component cost in percent	Weighted cost in percent
	(000,000)			
Long-term debt	$ 500	50	9	4.5
Preferred stock	100	10	10	1.0
Common equity	400	40	15	6.0
Total	$1,000	100		11.5

Most of the difficulties in establishing a fair rate of return have focused on determining the value of the firm's common equity. Two methods are frequently used for determining common equity costs. The first method attempts to compare the earnings of the firm in question to those of similar firms, and then to make adjustments for differences in risk. For example, under this method, telephone companies may be compared to electric utilities and manufacturing firms. Determining which firms are comparable, evaluating differences in risk and translating such differences into return differences are, however, all difficult and subjective tasks.

The second method involves the use of mathematical models. These models may produce even more subjective and controversial results than does the comparable earnings method. Depending on which model is used and what data and statistical techniques are used, estimates of cost of equity produced may vary widely.

A further difficulty which a regulatory agency must face when attempting to formulate a rate of return is determining what capital structure will minimize the firm's weighted average cost of capital. Increasing the firm's debt financing up to a certain point should lower its capital costs, since debt costs are lower. However, as the firm's percentage of debt rises, so do the risks borne by common stockholders since (1) they receive dividends only after interest to debtholders and dividends to preferred stockholders have been paid and (2) they are the last to be satisfied if the firm is liquidated. If the firm continues to issue debt financing, eventually its overall cost of capital is likely to rise.

Because of the complexity involved in making rate of return determinations, and in light of the legal requirements imposed, regulatory agencies often use adversary hearings as part of this process. Testimony is presented by representatives of the

firm involved, the agency staff, and other interested parties. Based on this record, the Commission makes a judgment as to the rate of return to be authorized.

REVIEWING RATE BASE AND EXPENSE ITEMS

While the establishment of a fair rate of return is the most direct means of controlling the regulated firm's profits, it alone is not sufficient to ensure a reasonable and equitable outcome. The regulatory agency must also review the firm's rate base and expenses to ensure that they are needed to provide adequate service to the public. In this regard, the agency must determine which expenditures belong in the rate base, which are to be allowed as current expenses, and which should be disallowed completely.

A firm's rate base is the net value of the property used and useful in providing service. For telecommunications firms, the rate base includes such items as land, buildings, cables, poles, microwave towers, and switches. Because a firm's profits are related to the size of its rate base as well as its rate of return, the inclusion of items must be carefully evaluated. This is particularly true since regulated firms may have incentives to expand their rate bases beyond their most efficient levels.

Expenses incurred by telecommunications firms include maintenance expenses, taxes, and depreciation--the three largest categories--as well as a variety of other expenses. Generally, only those expenses which represent the reasonable costs of efficient operation may be included in a firm's revenue requirements.

Should the agency determine that a cost should not be included in the firm's revenue requirement, it can "disallow" the item by charging it to the firm's stockholders rather than to ratepayers. In addition, regulatory agencies may be given specific authority to authorize the construction of certain facilities by the firm. Such authority is intended, in part, to help the agency oversee the firm's costs and prevent undue rate base expansion.

To supervise regulated firms' expenses, rate base items and rate of return, regulatory agencies, such as FCC, may also prescribe accounting systems to be used by the firms and require them to submit financial and operating reports in accordance with rules formulated by the agency. Accounting rules set forth, among other things, the kinds of costs which are to be capitalized in the rate base as well as those which are to be considered as current operating expenses. The reports contain details on the financial structure of the regulated company, names and salaries of officers and directors, amounts of assets, liabilities, income, expenses, and detailed supporting schedules for major items.

THEORETICAL CONCERNS WITH RATE OF RETURN/ RATE BASE REGULATION

The ability of rate of return/rate base regulation to achieve its goal of producing rates similar to those which would occur in a competitive environment has been widely discussed in economic literature. In this literature, economists have pointed out a number of undesirable side effects which can result from the imposition of such regulation. These effects can, at the least, lessen the benefits derived from limiting the firm's profits as well as requiring regulatory intervention in other aspects of the firm's operations. Among the problems which have been cited are

--the incentive for the firm to excessively expand its rate base,

--the tendency for the regulated firm to be less cost conscious,

--the tendency of the regulated firm to be less innovative, and

--the incentive for the firm to evade regulation and enter unregulated or loosely regulated areas.

Excessive expansion of rate base

The theory that a regulated firm may have incentives to expand investment beyond the most efficient level has received much attention. The theory is largely based on work done by Averch and Johnson in 1962, 1/ who concluded that if (1) a monopoly utility firm wishes to maximize its profits and (2) its allowed rate of return exceeds its cost of capital but is less than if it were unconstrained, the firm will substitute capital for other factors of production and operate at an output where cost is not minimized (i.e., it would excessively expand its rate base). It has also been suggested that such a firm would have incentives to enter other markets, even those in which it operates at a long-run loss, since shortfalls could be made up in other markets in which the firm had been previously prevented from pricing at profit maximizing levels. This could, in turn, drive out other firms or discourage them from entering such markets.

While much has been written on this so-called Averch-Johnson effect, there is little consensus on its effects and magnitude. Attempts to test the theory empirically have produced

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1/H. Averch and L. L. Johnson "Behavior of the Firm Under Regulatory Constraint," American Economic Review, Vol. 52 (Dec. 1962), pp. 1053-1069.

inconclusive and conflicting results. No empirical study of which we are aware has been attempted in the telecommunications field.

Nevertheless, it has been suggested that the effect does describe a real tendency which might show up in such things as

--the decision to construct rather than lease a facility;

--the establishment of excessively high service standards, thus requiring more excess capacity; and

--reluctance to use full peak responsibility pricing (which would conserve capital).

As noted earlier, however, the Averch-Johnson effect is theoretically valid only if the rate of return exceeds the firm's true cost of capital and if the firm is a profit maximizer. Further, since the magnitude of the effect is questionable, it is difficult to determine to what extent it offsets the benefits of reducing monopoly profits through rate of return/rate base regulation. Finally, economist Alfred E. Kahn has suggested that the effect may actually be more beneficial than harmful in that by encouraging output expansion and risk taking, it may offset a monopoly's natural incentives to underinvest. 1/

Reduced cost consciousness

One of the most telling effects of rate of return/rate base regulation is its erosion of the incentive for the regulated firm to be cost efficient. If regulation continuously limits the firm's revenue requirements to its true cost of service, it tends to take away any supernormal returns (monopoly profits) which result from improvements in efficiency and cost reduction. Lacking both the ability to realize such monopoly profits as well as the spur of competition, the firm may have no incentive to try to improve its efficiency.

Further, by allowing firms to only earn their cost of capital, a situation may be created where firms can pass on inefficiencies in higher rates without harming existing stockholders. In fact, it may create incentives for the firm to pad its expenses and to buy its services, materials, and other inputs from financial affiliates at inflated prices.

Lack of innovation

A closely related argument is that profit limitation through rate of return/rate base regulation alters a firm's incentive for

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1/Alfred E. Kahn, The Economics of Regulation: Principles and Institutions, Vol. II (New York: John Wiley and Sons, Inc., 1971)

product innovation. While unregulated firms may be expected to seek new inventions which will increase their profits, rate of return regulation may alter this incentive. It has been argued, in this regard, that to the extent that a regulatory agency is able to limit a firm's rate of return to a normal level, it takes away its incentive to engage in high-risk research and development--since such activities only pay off if a high return can be earned on successful inventions.

Depreciation policy may further weaken a regulated firm's incentive to innovate. In cases where equipment becomes technologically obsolete before it is fully depreciated, a firm may be reluctant to replace it with new cost-saving equipment for fear that the regulatory body will require that the obsolete equipment be removed from the rate base. Such action could conceivably leave the firm in a worse financial position than if it chose to continue using the old equipment until it was fully depreciated.

As in other areas, however, there appears to be little empirical evidence either proving or disproving a general pervasive effect of regulation on innovation.

Evasion of regulation

Because rate of return regulation holds a firm's profits below those which it could earn if unregulated, firms have incentive to evade regulation. Thus a firm may enter markets which are unregulated or laxly regulated, regardless of efficiency reasons, so that it can shift profits and revenues to the unregulated business while shifting costs and assets to the regulated activities. For example, if a telephone company owned an unregulated equipment manufacturing firm, it could conceivably transfer monopoly profits from the regulated to the unregulated market simply by raising equipment prices to itself.

BASIC PROCEDURES USED IN ESTABLISHING RATES OF RETURN

The procedures used by FCC in establishing rates of return generally follow the following basic framework:

1. The carrier submits a revised tariff filing in which it calls for increased revenues needed to earn a higher rate of return than previously authorized by FCC. This higher return is required to meet increased capital costs. 1/

2. If FCC determines that the rate of return aspects of the tariff should be investigated, it can issue an order suspending the tariff and instituting such an investigation. A rate of return investigation includes examinations and determinations of such things as

   a) the cost of embedded debt,

   b) the cost of preferred stock equity,

   c) the cost of common stock equity,

   d) the cost of any other sources of financing,

   e) the weights to be accorded these costs of sources of financing in the carrier's financial structure, and

   f) the authorized rate of return.

3. A separated trial staff is established within the Common Carrier Bureau to investigate the areas of concern in the proceeding. While the proceeding is underway, the members of the trial staff are restricted in their access to Commissioners, the administrative law judge who is responsible for presiding over hearings, and certain other high-level FCC officials.

4. Prehearing conferences are held to, among other things, clarify the issues to be considered and establish procedures to be followed during hearings.

1/The carrier may instead submit a petition for a higher rate of return.

5. Hearings are held before a presiding administrative law judge. 1/ During these hearings the carrier, the trial staff and other interested parties present written evidence and testimony regarding the issues of concern. Witnesses may be cross-examined by the other parties. Rebuttal and surrebuttal testimony may also be presented.

6. Based on the evidence of record the presiding administrative law judge prepares and issues an initial decision containing his findings in the proceeding.

7. Parties to the proceeding may file exceptions to the initial decision. The Commission may also hold oral argument on the exceptions, require the filing of briefs or remand the proceedings to the administrative law judge, if necessary.

8. The Commission reviews the initial decision and any additional information obtained through procedures described in step 7. Based on this it issues a final decision.

1/Hearings may also be conducted by the Commission or one or more Commissioners.

PROBLEMS REGARDING AT&T's RATE BASE AND EXPENSE ITEMS CITED BY FCC IN DOCKET 19129, PHASE II

In chapter 3, we discussed problems which FCC cited in phase II of Docket 19129 regarding AT&T's construction program, its utilization of the interstate telecommunications network, and its maintenance expenses, as well as subsequent FCC actions to deal with these problems. In its final decision in Docket 19129 FCC also pointed out a number of other rate base and expense items which required further study in the future. These included: 1/

--AT&T's investment in affiliates,

--AT&T's cash management program,

--AT&T's internal audits program,

--AT&T's expenditures on the Business Information Systems Programs,

--AT&T's investment in Traffic Service Position System installations, and

--AT&T's traffic expenses.

As is indicated below, little, if any, subsequent action has been taken by FCC on many of these matters.

Investment in affiliates

In its Docket 19129, phase II, final decision FCC expressed concern that investment in certain affiliates of AT&T--Bell Telephone Laboratories and the 195 Broadway Corporation--were included in the interstate rate base. This investment totaled $48.4 million in 1972. Bell Laboratories conducts various types of research related to telecommunications and develops and designs telecommunications products, among other activities. The 195 Broadway Corporation owns the buildings housing AT&T's General Department, which provides certain staff services to AT&T operating companies and provides funding for Bell Laboratories. FCC noted that because these affiliates were consolidated within AT&T for rate purposes, interstate ratepayers had to pay a return on the investment in the affiliates.

1/FCC also stated that action was needed to address problems relating to AT&T's depreciation practices and the treatment of certain types of station apparatus (see ch. 7). In addition, FCC concluded that revisions were needed in the Uniform System of Accounts, as is discussed in chapter 5.

FCC stated that while it had no information which would allow it to make even a preliminary judgment on the rate base treatment of the 195 Broadway Corporation, it saw no justification for including Bell Laboratories in the rate base. FCC noted that Bell Laboratories contracted its services to AT&T, Western Electric, and others and, in the case of contracts with AT&T, expenses associated with such contracts were allowed as operating expenses for ratemaking purposes. It added that while it did not question the allowance of those expenses, it did not understand why ratepayers were also required to pay a return on Bell Laboratories investment. FCC chose not to disallow investments in the two affiliates at that time, but said it would

> "* * * shortly institute a separate rule making proceeding to examine the reasonableness of including in the rate base the Bell System's investment in Bell Labs and the 195 Broadway Corporation."

In 1977 FCC initiated a proceeding which was to examine the ratemaking treatment of these affiliates. However, the proceeding was aimed at exploring only the question of whether investment in the affiliates was counted both as a rate base and expense item--not larger questions concerning the treatment of AT&T's investment in these affiliates, such as how and to what extent this investment benefits AT&T's ratepayers. We were told during the course of our review that these issues still remain unresolved, although they may be explored to some extent in FCC's present investigation into AT&T license contract arrangements.

AT&T's cash management program

Included in AT&T's interstate rate base is an allowance for working capital. Working capital is, in a general sense, the funds required on an annual basis to finance the day-to-day activities of a business. It consists of two major elements: (1) cash and cash items needed to pay current expenses and (2) investment in materials and supplies. Allowance for these items in the 1972 rate base were $86.4 million and $21.4 million, respectively.

In its Phase II investigation FCC raised questions concerning AT&T's treatment of materials and supplies and its management of the cash which it needed to conduct its daily operations. Regarding the treatment of materials and supplies, FCC determined that AT&T's investment in materials held for future construction should be excluded from the rate base until it was recognized as part of an allowed construction project. Thus, FCC disallowed $63.4 million from AT&T's 1972 rate base, subject to subsequent adjustment.

Regarding cash management, in his initial decision, the presiding administrative law judge stated that AT&T had presented no evidence on which the Commission could rely to ensure that the cash balances which AT&T maintained in its rate base were required in the rendition of service. Thus he recommended

> "* * * that Bell be required to submit, within six months, a program designed to insure cash management practices that will minimize cash requirements for the daily operation of the business. Such programs ought to be capable of being monitored and their oversight should be included as part of the regulatory program of this Commission."

The Commission endorsed this requirement in its final decision.

In August 1977 AT&T submitted a report on its cash management practices. An FCC official who had reviewed the report said that he questioned its responsiveness; however, as of August 1981 no further action has been taken on the matter.

AT&T's internal audits program

In its investigation FCC raised questions about the procedures used by AT&T for carrying out its internal audits program. 1/ Particularly, FCC in its final decision expressed concern that there was "no effective central audit direction nor system of standard procedures for internal auditing." FCC stated that because of the integrated nature of AT&T and the comprehensive regulatory scheme in the Communications Act which requires it to examine the costs of services offered by all its operating companies and to audit those costs, it needed to have "consistent, valid audit reports" of the costs and revenues as reported individually and collectively by those companies.

Thus, FCC stated that "consistent with our continuing surveillance over the Bell System and the revisions to the Uniform System of Accounts" it expected AT&T to institute procedures which would ensure a more centralized and adequate supervision and auditing control by the parent company over the operating companies. It called for AT&T to report the procedures which it had developed and instituted within 6 months. AT&T filed such a report in August 1977. FCC officials told us, however, as of August 1981 that nothing further had been done on the subject.

1/Internal audits activities were considered as a general expense item.

Business Information Systems Programs

Business Information Systems Programs is a section of Bell Telephone Laboratories charged with the centralized development of computer-based systems. The 1973 budget for these programs was $46 million, all of which was funded by AT&T's Operating Companies, which previously performed this function.

FCC's staff claimed that over 18 percent of the investment in the program was for projects that were abandoned and that the program had never operated cost-effectively. It also argued that the operating companies' individual programs were so successful that a centralized program was unnecessary.

The Commission agreed with the staff that the record indicated the Business Information Systems Programs had not been "entirely efficient or cost-effective in its assigned functions" and that further study of the future funding of the program was needed. The Commission stated, therefore, that it would require AT&T, within 6 months, to submit a full written justification for continuing its funding of the program. Upon receipt of the justification, the Commission said it expected to take another look at allowance of expenses related to the program. A Common Carrier Bureau official told us, however, that nothing further has been done on this matter. He added that while FCC's investigation into AT&T's license contract arrangement may touch on this subject, it will not directly address the issues raised in Docket 19129.

Investment in Traffic Service Position System installations

Traffic Service Positions are a type of switchboard which is used by the Bell System for handling toll calls requiring operator assistance. Using the Traffic Service Position System, customers can dial various types of toll calls such as person-to-person and collect calls, directly, as in station to station service, with operator assistance provided only briefly. When "cordboard" operator positions are used, customers are required to first access a toll operator, who then dials the call, monitors it, and disconnects when it is completed.

In its investigation, FCC's trial staff had questioned the prudence of AT&T's investment in this system--believing that AT&T had installed 4,926 excess positions, the interstate investment of which totaled $46.3 million. It also called for more careful study of the costs involved in using Traffic Service Position and cordboard installations. The administrative law judge agreed with the staff that more information on the system was needed, although he did not support a disallowance for excess investment. In this regard he stated

> "The record is burdened with much detailed claim and counter-claim about the relative economics of TSPS and Cordboard, and much disputed and intricate argumentation about the validity of data and its uses and evaluation. This denotes a deplorable lack of readily available, intelligible, tested data reliably indicative of costs and cost comparisons. Both the Company and the Commission need such information. * * * A number of factors * * * all reinforce the need for close and timely check by the Commission of the economic acceptability of further [Traffic Service Position System] installations."

In its final decision, the Commission agreed with the need for additional information. Thus it called for the Common Carrier Bureau to establish reporting requirements to obtain pertinent information on future installations.

Officials in the Common Carrier Bureau's Domestic Facilties Division told us that following Docket 19129 they had monitored implementation of the Traffic Service Position System and corresponded with AT&T on it. They believed that as a result of their efforts implementation of the system had been improved. One official told us in this regard that because of their efforts he believed AT&T had taken some unneeded equipment out of operation; however, such equipment remained in the rate base. A formal proceeding, he added, would be necessary to remove this equipment from the rate base, but such a proceeding is not anticipated.

Traffic expenses

AT&T's traffic expenses are primarily composed of operators' wages, employment and training, and supervision. Interstate traffic expenses totaled $591 million for 1972. Based on its investigation, FCC staff questioned several aspects of the handling of traffic including operator efficiency. In this regard, the staff asserted that operator efficiency in handling calls had declined during 1969-72 in spite of the fact that AT&T had invested hundreds of millions of dollars for equipment, including Traffic Service Position System units, which were purportedly designed to increase operator efficiency.

Both the Commission and the administrative law judge found evidence presented by the staff to be insufficient to support a disallowance. However, the Commission said it was "very concerned" about the cost-effectiveness of automated switching equipment installations, such as the Traffic Service Position System.

Thus, it said it would require as part of its effort to increase surveillance over switching equipment installations, efficiency reports and prior justification of the cost-effectiveness of future Traffic Service Position System applications. Subsequent actions by FCC on this subject are discussed on page 207.

MODIFICATIONS OF AND ALTERNATIVES TO RATE OF RETURN/RATE BASE REGULATION

Because of the problems relating to rate of return/rate base regulation, both theoretical and practical, a variety of modifications and alternatives have been suggested. These range from minor alterations in the methods used to determine the rate of return to entirely different forms of regulation. The following will outline some of these proposals. It will not discuss those approaches which deal solely with how to compute the cost of equity, but will discuss some modifications to the rate of return setting process.

MODIFICATIONS TO THE RATE OF RETURN SETTING PROCESS

Various suggestions have been made to modify the rate of return setting process to provide greater incentives for the regulated firm to attempt to minimize its costs. One basic proposal for accomplishing this is allowing the firm's rate of return to exceed its cost of capital by establishing a range rather than an exact figure for the rate of return. In addition, parties have suggested, and some State commissions have adopted, automatic rate adjustment clauses to obviate the need for rate hearings to compensate for changes in the economy.

Rate of return ranges

Because limiting the regulated firm's rate of return to its cost of capital tends to weaken efficiency incentives, it has been proposed that the firm be allowed to earn above its cost of capital. This would be accomplished by establishing a zone of reasonableness in the rate of return, the top of which (at least) would be above the firm's cost of capital. By establishing such a zone of reasonableness, a firm would theoretically have an incentive to minimize its costs, since by doing so it could, to some extent, increase its profits. The FCC ostensibly followed this approach in Docket 19129 (Phase I)--establishing a 0.5 percent range in AT&T's allowed rate of return to "encourage improved operating

efficiency and productivity." (See p. 37.) FCC referred to this as a "conscious use of regulatory lag." 1/

While the establishment of a range in a regulated firm's rate of return which will allow it to earn above its cost of capital may provide benefits to both investors and consumers, the approach is not without problems. One major problem is ensuring that any supranormal profits result from increased efficiency rather than from monopolistic or discriminatory pricing.

Adjustment clauses

Automatic rate adjustment clauses are designed to expedite adjustments to changes in economic conditions by allowing utilities to raise or lower their rates in response to certain cost changes without going through a full rate proceeding. This may be done, for example, by indexing utility rates or specific costs to a general economic indicator such as the Consumer Price Index--so that rates would automatically go up or down by the same percentage as the percentage change in the indicator. They may also simply allow utilities to pass along certain cost increases to customers. The primary advantages of using such a system are that (1) it would be easier for utilities to deal with inflation and, thus, to continue to be able to obtain necessary capital and (2) regulatory agencies might be required to conduct fewer rate hearings and, thus, they could devote their time to other areas needing attention.

Automatic adjustment clauses have been implemented by several State commissions for use in regulating public utilities. Probably the most common of these adjustment clauses is the fuel adjustment clause, which allows electric utilities to directly pass along changes in fuel costs to customers.

1/Regulatory lag results from the slowness of the regulatory process to make needed adjustments in a regulated firm's earnings--either by reducing earnings which prove to be excessive or by approving new rates needed to keep the firm's rate of return at satisfactory levels. While such lag could be perceived as a weakness in the regulatory process, some economists have suggested that it may, in fact, be beneficial and, thus, that some regulatory lag should be institutionalized. Advocates of the use of regulatory lag argue, in this regard, that it provides incentives for the firm to reduce costs since such action can allow it to reap supranormal profits until the regulatory agency takes action by ordering rate reductions. Alternatively, it is argued that if the time between rate increase requests and approvals is prolonged, the firm will be motivated to cut costs in the interim to preserve profits.

They have also been tried, to a limited extent, in telephone regulation.

In April 1980, the Michigan Public Service Commission decided on a plan which would link Michigan Bell Telephone Company's rates to the Consumer Price Index. The plan takes the annual percentage change in the Index, then subtracts 4 percent for productivity increases. The company could then raise rates by 90 percent of the remainder.

A different approach was tried by the New Jersey Board of Public Utility Commissioners. Its purpose was to provide interim relief or adjustment based upon costs which are beyond the direct control of the utility, to provide more gradual increases in rates and to reduce the cost of rate proceedings. The plan permitted New Jersey Bell Telephone Company's rates to be revised automatically in response to increases in any of four categories of cost: (a) salaries and wages (including fringe benefits), (b) depreciation expense, (c) "other expenses," a catch-all classification, and (d) taxes. Rates could be increased only if the company's rate of return fell below the authorized level.

Automatic adjustment clauses have attracted critics as well as supporters. Most often they have been criticized for the following reasons:

--they reduce efficiency incentives;

--they are tied to inappropriate indicators (e.g., telephone costs vary differently than does the Consumer Price Index);

--they are subject to manipulation;

--they can lead to distortions in the relative use of inputs, thus, reducing efficiency; and

--they abrogate the responsibility of the commissions.

INCENTIVE PLANS

Because of the lack of cost efficiency incentives found under rate of return regulation, several proposals have been made and a few tried, to improve such incentives. One of the simplest methods which aim at improving efficiency incentives--use of a rate of return range--was discussed on page 209. Other plans have, however, attempted to promote efficiency by linking utility performance to the allowed rate of return. These include "sliding scale" plans and several other somewhat more complex proposals. Major problems with such plans include establishing workable procedures for rewarding and punishing the utility and for isolating efficiency gains from changes which are related to exogenous factors.

Sliding scale plans

Sliding scale plans originated in Britain in 1855. Basically, they allow profit (the rate of return) to increase or decrease in inverse proportion to increases or decreases in rates (i.e., as rates decline, the rate of return is allowed to increase). This is designed to provide an incentive to the firm to increase profit by reducing rates.

Sliding scale plans have been tried several times in the United States, for example, by the Utilities Commission of the District of Columbia for regulating the Potomac Electric Power Company. Under this plan, a base rate of return of 7.5 percent was established. If revenues exceeded those needed to realize the rate of return, the company was allowed to retain half of the excess with the rest used for rate reductions. The company was not, however, required to absorb shortfalls. This plan was used from 1925-55 when it was abandoned because of inflationary problems (e.g., inflationary cost increases tended to obscure improved efficiencies). A similar plan, which was proposed for regulating the Southern California Edison Company, would have divided surplus profits among firm employees as well as consumers and stockholders.

Performance standards

One further modification which has been suggested is the establishment of performance standards. Under this proposal the regulator would specify reasonable standards of performance (e.g., based on negotiations with the firm) in areas such as price levels and service quality. The rate of return would be allowed to vary based on achievements of these standards. A major problem in implementing such a program would, of course, be the formulation of acceptable standards and development of a fair and effective system of rewards and penalties to promote their achievement.

Other incentive plans

In addition to sliding scale plans, other more complex plans have also been formulated which attempt to deal with the incentives of regulated firms. One such plan was that formulated by Horace J. DePodwin Associates in its study, "Regulation of Utility Performance, A Proposed Alternative to Rate Base Regulation" which was prepared for FCC in 1974. The plan involved establishing a range within which the firm's profits would be allowed to fluctuate. The range was also used to establish acceptable performance standards.

Basically, the plan called for initially determining an acceptable range of return of equity for the regulated firm, within which its initial cost of equity would be established.

This range would be modified as economic conditions changed. Next a performance index would be established based on the firm's net income per unit of output. Using the firm's initial period level of output, performance index levels would be determined which corresponded to the maximum and minimum limits on the range of return on equity.

Operation of the plan would involve comparing the firm's performance with the pre-established range. If net income per unit of output was above the acceptable range, excess profits would be divided between the utility and its customers. Customers would receive their share by means of lower rates for the service for which efficiency had improved. If net income per unit of output was within the range, no action would be taken. If net income per unit of output was below the acceptable range, intervention would be required only if the utility's return on equity had fallen below the lower limit of its acceptable range and the acceptable range had not declined. Under that circumstance, service rates would be raised to restore rate of return on equity at least to the lower limit. However, since that lower limit might still be below the utility's calculated cost of equity capital, in effect, a penalty would be imposed for poor performance.

A major obstacle to implementing a plan such as this would, of course, be the difficulty in carrying out the tasks, such as determining the appropriate range for the return on equity and measuring output, which are required for it to function effectively.

OPERATING RATIOS, EXCESS PROFITS, TAXES, FRANCHISE BIDDING, AND PUBLIC OWNERSHIP

In addition to the proposals discussed previously, a number of more far reaching alternatives have also been discussed. These include operating ratio regulation, excess profits taxes, franchise bidding, and public ownership.

One possible alternative to rate of return/rate base regulation is the use of operating ratios, such as is used by the Interstate Commerce Commission. Under this method overall revenue requirements are set at some percentage above operating expenses. The firm would earn profits on expenses, such as labor expenses, rather than or in addition to a return on investment--thus, giving it an incentive to inflate all expenses, not just capital.

Another alternative which has been suggested involves the use of excess profits taxes. Under this scenario, in place of profit regulation, a surtax would be imposed on profits in excess of the fair rate of return determined by the agency. Such a plan has been criticized, however, on the

grounds that it embodies some of the worst figures of regulation, and does not address price discrimination issues.

The use of franchise bidding has also been suggested. Under this approach, the right to operate a public utility would be put up for competitive bid at specified intervals. This process has also been criticized because, among other things, it probably will not prevent price discrimination and may foster market dominance.

Still a more unlikely alternative is public ownership. While presumably a publicly owned firm could be directed to price its services to limit discrimination and avoid monopoly profits, it would lose the efficiency incentives which can be expected to be present in a private, profitmaking firm.

EXAMPLES OF ITEMS INCLUDED IN DEPRECIABLE PLANT ACCOUNTS

Plant account	Examples
Buildings	Buildings--permanent fixtures, machinery, appurtenances and appliances installed (awnings, central air conditioning systems, electric wiring, fences and hedges, platforms, storage or loading water supply system).
Central office equipment	Electric instruments, apparatus, and equipment in central offices (automatic message recording equipment, circuit breakers, line concentrator equipment meters, operator head sets, repeater sets).
Station apparatus	Telephones, key telephones, coin telephone, teletypewriters, radio telephone.
Station connections	This account includes original cost of installing or connecting items of station apparatus and the original cost of inside wiring and cable and of drop and block wires.
Large private branch exchanges	Dial system private branch exchanges, cables or wires from distributing frame to switchboard, distributing frames, television program supply equipment and other television equipment on customers' premises.
Pole lines	Telephone poles, crossarms, bolts, guy wires, river crossing and long span fixtures, pole brackets.
Underground cable	Underground cable in conduit, cable terminals or boxes, splice cases, fuse boxes.
Buried cable	Buried cable and trenches for buried cable not run in regular conduit, protective covering for buried cable, and cable terminals.
Submarine cable	Submarine cable, protectors, carrier line filters, cable terminals.

APPENDIX X

Plant account	Examples
Aerial wire	Aerial wire, insulators, tie wires, grandwire, clamps, and rods, repeating coils.
Furniture and office equipment	Furniture and equipment in offices, storerooms and shops (bookcases, chairs, carpets, rugs, desks, drapes, fans, stoves, television sets, water coolers.)
Vehicles and other work equipment	Vehicles, tools, garage and shop machinery and equipment, (air compressors, concrete mixers, hand tools, power saws, torches, power winches, tents.)
Aerial cable	Aerial cable, cable clamps, cable terminals or boxes, fuse boxes.
Underground conduit	Original cost of tile pipe and other conduit.

APPENDIX XI

FCC's ESTIMATED INCREASES IN TOTAL REVENUE REQUIREMENTS FOR 1981 BASED ON DEPRECIATION CHANGES

Depreciation function	Increase in revenue requirement (millions)
Review of depreciation rates for all accounts for the 1981 companies (Note a)	$ 250
Review of depreciation rates for terminal equipment accounts for 1982 and 1983 companies	330
Remaining life rates for 1981 companies	620
ELG rates for new additions to outside plant for all companies	80
Station connections inside wiring phase-in	270
Total	$1,550

a/As described on page 142, depreciation rates are reviewed for approximately one-third of the FCC-subject carriers each year. Therefore, the 1981 companies would be the one-third falling in the 1981 review cycle.

APPENDIX XII

FCC's PROPOSED ASSIGNMENT OF LOCAL EXCHANGE PLANT TO INTERSTATE SERVICES

In its Second Supplemental Notice in the MTS/WATS market structure proceeding, FCC set forth the following basic procedures which were to be used for assigning local exchange plant to interstate services: 1/

Distribution of direct investment in exchange plant assigned interstate

A. Investment in Subscriber Line Outside Plant, station equipment, nontraffic sensitive central office switching equipment, and subscriber line exchange circuit equipment should be distributed to the access service categories (MTS/WATS, foreign exchange/common controlled switching arrangements "open end," private line and OCC-ENFIA) on the basis of holding time minutes of use.

B. Investment in traffic sensitive local dial switching equipment should be distributed entirely to the message access service categories (MTS/WATS, foreign exchange/common controlled switching arrangements open end and OCC-ENFIA) on the basis of relative dial equipment minutes, as defined in the Separations Manual except that if any such investment is presently assigned directly to private line service in accordance with Division of Revenue instructions such investment should continue to be assigned directly to private line.

C. Investment in that portion of exchange trunk outside plant used jointly for exchange and toll message service and related exchange trunk circuit equipment should be distributed to the message access service categories on the basis of relative minutes of use. 2/

D. Investment in exchange trunk outside plant for interstate private line service and any related circuit equipment should be assigned directly to private line service. However, outside plant facilities running between local central offices and toll offices should be excluded and considered as interexchange plant.

1/As discussed in chapter 8, FCC also proposed to make adjustments in the assignments to service categories to exclude plant and expenses which were not used in their provision.

2/Plant used exclusively for toll service is not within exchange plant, as FCC defined that term, and such plant was to be assigned to the interexchange portion of interstate service.

E. All other direct plant investment should be distributed among the access service categories based on the same factors which are used in the Separations Manual to allocate the particular plant category or subcategory between State and interstate jurisdictions. If the Separations Manual factors cannot be used for this purpose, investment should be distributed based on the Separations Manual principles or, alternatively, on the basis of relative minutes of use.

Distribution of remaining investment and expenses for exchange plant assigned interstate

The investment and exchange plant not distributed as shown above (e.g., land and buildings, furniture and office equipment, vehicles and other work equipment, organization, franchises, patent rights, plant under construction, materials and supplies, cash working capital) and the expenses related to the provision of exchange access should be distributed to the exchange plant service categories based on the method AT&T used in developing its restated FDC-7 results for its 1978 Central Submission and on the factors contained in Volume 28 of the 1978 Central Submission.

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